INDEX OF AUTHORS.

A.

Aarland, G., electrolysis of citraconic and mesaconic acids, 1221.
—— electrolysis of itaconic acid, 377.
Abeljanz, H., dichlorethyl oxide, 154.
—— the action of potassium on benzene, and of ethyl bromide on naphthalene-potassium, 382.
Ador, E., diphthalyl, 66.
—— phthalyl, the radical of phthalic acid, 392.
Adrieenz, A., benzene, phenol, monochlorobenzene, and monobromobenzene, 885.
Aeby, C., constituents of bone-phosphates, 354.
—— metamorphosis of bones, 923.
de Aguiar, A., nitronaphthalenes, 174.
Alménn, formation and detection of hydrocyanic acid, 93.
—— detection of prussic acid in cases of poisoning, 193.
Amagat, M., compressibility of hydrogen and air at high temperatures, 239.
Ammann, H., action of nascent hydrogen on bitter-almond oil, 1139.
Aniton, action of monobromacetyl bromide on zinc-ethyl, 48.
Appenzeller, H., methylaniline green, 1242.
Armengaud, J., industrial production of cold by the expansion of permanent gases, 716.
Armstrong, H. E., action of the acid chlorides on nitrates and nitrites: Part I, action of acetic chloride, 683.
Aronheim, B., synthesis of phenylbutylene, 499.
—— synthesis of naphthalene, 632.
Arzruni, A., isomorphism of the anhydrous sulphates of the alkaline earths, 247.
Asselin, E., solubility of metallic oleates and of calcium sulphate in glycerin, 875.
Atterberg, A., compounds of glucinum, 1003.
Aubert, H., the quantity of carbonic acid excreted by the human skin, 396.
Audouin and Pelouze. See Pelouze.
Austen, P. T., preliminary notice on a new salt of quinine, 1148.

B.

Bach, O., tests for solanine, 1263.
Baesecke, Haase, and Kühn. See Kühn.
Baeyer, A., compounds of aldehydes and alcohols with aromatic hydrocarbons, 884.
—— compounds of aldehydes with phenols and aromatic hydrocarbons, 501.
—— mellitic acid, 755.
Bajault and Roche, new process for the manufacture of steel, 418.
Baranetzky, J., investigations on diosmose, 346.
Barbaglia, action of chlorine on isobutyric aldehyde, 877.
Barbaglia, G. A., commercial and pure isobutyl alcohol and isobutyraldehyde, 1217.
—— polymeric modification of isobutyraldehyde, 378.
Barbaglia, G. A., and A. Kekulé, action of phosphorus pentachloride on sulphonic acids, 277.
Barbier, fluorene, 1226.
Barfoed, C., dextrin, 611.
—— detection of grape-sugar in presence of dextrin and other allied bodies, 1163.
Barthélemy, endosmose of gases through vegetable membranes, 1251.
Basarow, A., synthesis of parabanic acid, 75.
—— constitution of periodic acid, 596.
Bastian, H. C., note on the origin of bacteria and on their relation to the process of putrefaction, 406.
Battershall, J. P., new derivatives of naphthalene, 1138.
Baudet, use of phenol in leather dressing, 206.
Baudrimont, A., the composition of guanos, their alterations, and the pro-

bable origin of the fossil phosphates of the Lot district, 609.
Bauer, Jos., tissue-change in the animal body after blood-letting, 644.
Baumann, E., addition-products of cyanamide, 1024.
Baumhauer, H., the affinity of bromine for oxygen, 1096.
—— the structure of isomorphous crystals, 130.
Baumstark, T., a new constituent of urine, 1242.
Béchamp, A., alcohol and acetic acid normally present in milk as products of the functions of microzymes, 763.
—— the function and transformation of fungi, 404.
—— glairin from the springs at Molitz, 1149.
—— on the normal microzymes of milk as the cause of the spontaneous coagulation, and of the alcoholic, acetic, and lactic fermentation of that liquid, 927.
—— physiological theory of alcoholic fermentation by beer-yeast, 405.
—— spontaneous alcoholic and acetic fermentation of the liver; physiological alcohol in human urine, 399.
Béchamp and Estor, transformation of bacteria into microzymes and of microzymes into bacteria in the alimentary canal of animals, 1048.
Becequerel, M., phenomena produced by molecular attraction in capillary spaces, 1185.
Behr, A., sulphobenzophenone and a product of the distillation of barium benzoate, 276.
Behr, A., and W. A. van Dorp, acenaphthene and naphthalic acid, 632.
—— —— action of heated lead oxide on organic bodies, 1135.
Behrens, E. A., coal-tar and pitch, 419.
Beilstein, F., and A. Kuhlberg, oxybenzoic acid, 72.
—— —— trinitro-naphthalenes, 69, 1138.
Belani, E., distribution of carbon in Bessemer steel, 953.
Belohoubek, A., correction of an erroneous statement concerning the preparation of chloroform, 364.
van Bemmelen, J. M., on Marx's (Gorpelsröder's) method of estimating nitric acid in well-water, 90.
Bender, C., the Liebfrauensee of Kissingen, 359.
Bender, W. A., estimation of the oxygen in decarburised Bessemer iron before addition of spiegeleisen; mode of action of the spiegeleisen, 298.
Benedict, R., monobasic calcium saccharate, 876.
—— products of the distillation of sugar with lime, 490.
Benevides, F., flames of compressed gases, 590.
Benoit, electric resistance of metals, 852.
Benrath, H., preparation of an enamel suitable for frosted glass-making, 1171.
—— Glauber's salt in soda used for making glass, 540.
Berger, observations on Leidenfrost's phenomenon, 242.
Bert, P., experimental researches on the influence of barometric changes on the phenomena of life, 643, 762, 1249.
—— influence of barometric changes on the phenomena of vegetable life, 1250.
Berthelot, M., calorimetric researches on the state of bodies in solution, 838.
—— heat evolved in the reactions of chlorine and its compounds, 1094.
—— heat of combustion of formic acid, 1099.
—— on the heat disengaged in the reaction between hydracids and water, and on the molecular volume of solutions, 715.
—— heat disengaged in the reactions between water and the hydrates of potassium and sodium, 999.
—— the constitution of the hydracids in solution and their inverse reactions, 835.
—— reciprocal displacements of the hydracids, 1192.
—— observations on the mercury calorimeter, 132.
—— production of propionic acid by means of carbon oxide, 614.
—— the state of salts in solution, 236.
—— the statics of saline solutions, 468.
—— action of water on the alkalis and alkaline salts; constitution of alkaline solutions, 1096.
—— sulphovinic acid and its salts, 869.
Berthelot, M., and L. de Saint Martin, the state of salts in solution, 35.
Bertrand, new locality of leadhillite, 481.
Bidard, the flame-test for boric acid, 1055.
Biedermann, R., cresol derivatives, 898.

Biedermann and Pike, cresotic acid, 904.
Biel, J., testing of quinine, 410.
Bindschedler, R., separation of toluidine and pseudotoluidine, 911.
Binz, C., influence of ethyl alcohol on animal heat, 518.
—— production of ozone in the animal organism, 928.
—— value of tincture of guaiacum as a test for ozone, 938.
Bischof, C., behaviour of fire-clay in contact with iron slag at a high temperature, 1269.
—— fire-resisting power of various clays, 951.
—— pyrometric examination of Dinas bricks, and their raw material, 192.
Bischoff, C., chloroderivatives of acetone, 159.
Bisschopinck, L., chlorinated acetonitriles, 1128.
Bizio, G., detection of bromine in presence of urea, 190.
—— the purple of the ancients, and the colouring matter found in the sarcophagus of St. Ambrose, at Milan, 657.
Blanche and Jolyet. See Jolyet.
Blas, detection of picrotoxin in beer, 94.
Blomstrand, C. W., toluene-disulphonic acid, 505.
Bloxam, T., obituary notice of, 773.
Bode, F., estimation of oxygen in vitriol chamber gases, 1159.
—— the roasting of pyrites, 956.
—— sulphuric acid manufacture, 413.
Boeke, J. D., removal of nitrogen from alkaloïds, 1041.
—— action of ozone on pyrogallic acid, 1031.
Boehm, J., the respiration of land plants, 1049.
Böhnke-Reich, H., picrotoxin, 643.
Böttger, R., behaviour of certain metals to potassium ferrocyanide, 282, 473.
—— black printing colour resisting the most powerful chemical agents, for linen and cotton fabrics, 205.
—— a blue stamp colour, 423.
—— a collodion of extraordinary tenacity, 658.
—— colouring paraffin and other materials black for candle making, 205.
—— new depilatory, 308.
—— estimation of alcohol in volatile oils, 532.
—— detection of traces of manganese, 652.
Böttger, R., a simple process for the detection of water and alcohol in ether, 532.
—— detection of sulphocyanogen in saliva, 536.
—— indications of a nitrite in saliva, 536.
—— preparation of pure anhydrous cuprous oxide of a fine vermilion colour, 355.
—— preparation of red quick-matches of gun-cotton, 956.
Böttger, A. R. and Th. Petersen, nitro-derivatives of anthraquinone, 389.
Böttinger, C., action of phosphoric chloride on pyroracemic acid, 1221.
—— pyroracemic acid, 1128.
Boillot, A., new method of producing ozone, 724.
—— action of ozone on alcohol, and combination of cyanogen with hydrogen under the influence of the silent electric discharge, 865.
—— production and mode of action of the silent electric discharge, 713.
Borodin, A., condensation-products of aldehydes, 58.
Borodulin, action of silver nitrate on cane-sugar, 46.
Bouchardat, G., mannite and its derivatives, 1123.
—— neutral compounds derived from mannite, 160, 747.
—— researches on dulcite and on sugars in general, 160.
Bourgoin, E., action of bromine on dibromosuccinic acid, 621.
—— preparation and properties of oxymaleic acid, 376, 1021.
—— transformation of succinic acid into maleic acid, 1127.
—— water in electrolyses is not decomposed by the current, 27.
Boussingault, M., amount of iron in the blood and in foods, 288.
—— distribution of iron in the constituents of the blood, 398.
—— nitrification of vegetable earth, 725.
Boussingault and Damour, tumefaction of obsidian by heat, 856.
Bouvier, new method of testing alcohol for fusel oil, 532.
Brandt, preparation of various chlorates by means of aluminium chlorate, 950.
—— aniline black, 1059.
Brezina, A., development of the chief

propositions in crystallography and crystalline physics, 857.
Brigel, E., sulphur-springs at Lostorf in the Solothurn Jura, 743.
Brigel, G., examination of Kirschwasser, 1065.
—— lead: its impurities and their influence on the technical use of the metal, 846.
Britton, J. B., colorimetric estimation of combined carbon in steel, 295.
Brocke, J., detection of ozone, 938.
Brockhoff and Geuther. See Geuther.
Brodie, Sir B. C., action of electricity on gases, 348.
Bronner, the new aniline-colour "Rosa," 207.
—— preparation of stannic chloride, 1274.
Brough, J. C., obituary notice of, 774.
Broughton, J., chemical examination of the bark of *Azadirachta indica*, 1157.
Brown, H. T., influence of pressure on fermentation. Part II, influence of reduced pressure on the alcoholic fermentation, 973.
Brown, J. C., testing of butter for adulterations, 1064.
Brücke, E., the carbohydrates and the mode in which they are digested and absorbed, 394.
Brüning, A., manufacture of rosaniline, 658.
Brunner, H., detection of digitalin and atropine, 1062.
Brunner, Th., the composition of human milk, 927.
Brush, G. J., a compact anglesite from Arizona, 1205.
Buchner, L. A., preparation of acetic acid, 613, 957.
—— the solubility of arsenious acid in water, 1006.
Bunte, H., determination of boiling points at the normal pressure, 1103.
Burstyn, M., determination of free acid in fatty oils, 411.
—— estimation of zinc by means of a stream of hydrogen, 192.
—— water-bath with self-acting draught, 472.
Butlerow, A., preparation of methyl iodide, 1014.
—— trimethylacetic acid, 48, 1020.
—— preparation of trimethyl-carbinol, 1119.
—— properties of trimethyl-carbinol, 369.
Butlerow and Gorjainow, polymerisation of hydrocarbons.—Trimethylcarbinol, 873.
—— —— solution of ethylene in sulphuric acid, 747.
Byasson, H., decomposition of chloral hydrate by the combined action of glycerin and heat, 264.

C.

Cahours, A., new propyl derivatives, 365, 871.
Cailletet, L., liquid carbon dioxide, 350.
Calvert, F. C., on the power which certain substances possess of preventing putrefaction and the development of protoplasmic life and of fungi, 405.
Cameron, C. A., unusual amount of ammonia in a so-called spa water, 256.
Campani, G., detection of grape and milk sugar, 534.
Cannizzaro, S., and F. Sestini, researches on santonin, 1229.
Carius, L., the absorption of ozone by water, 472.
Carles, P., distribution of the alkaloïds in Cinchona barks, 525, 931.
Carnelley, Th., the vanadates of thallium, 323.
Caro, L., ferrous sulphate precipitated by alcohol; ammonio-ferrous sulphate and potassio-ferrous sulphate, 246.
Carpenter, W. L., on Bock's process for the production of stearic and palmitic acids, 658.
Carter, H. V., structural composition of urinary calculi, 517.
Chabrier, M., active properties acquired by some gases under the influence of the silent electric discharge, 29.
Champion, P., a substance extracted from a Chinese fungus, 283.
Champion P. and H. Pellet, analysis of glycerin, 1165.
—— —— the decomposition of explosive bodies compared with the phenomena of supersaturation, 1103.
—— —— estimation of nitroglycerin in dynamite, 1165.
—— —— the various vibratory motions produced by detonants, 31.
Champion, Pellet and Grenier, spectral analysis and the spectro-sodiometer, 934.
Chapman, E. T., obituary notice of, 775.
Chase, A. W., calcium borate from Oregon, 1206.

Chatard, T. M., estimation of small quantities of manganese, 531.
—— washing of gelatinous precipitates, 527.
Chautard, J., influence of light of various colours on the spectrum of chlorophyll, 713.
—— classification of the absorption-bands of chlorophyll; accidental lines, 997.
—— modification of the spectrum of chlorophyll under the influence of alkalis, 582.
—— spectral phenomena presented by different solutions of chlorophyll, 996.
—— spectrum of chlorophyll, 341, 1258.
—— spectroscopic examination of the chlorophyll in the residues of digestion, 521.
Chevreul, E., occurrence of avic acid in guano, 1052.
Chojnacki, synthesis of phenyl-allyl, 1029.
Christiansen, C., colour-dispersion of fuchsine, 236.
—— a new water air-pump, 131.
Christiansen and Topsöe. See Topsöe.
Christison, R., action of water on lead, 1006.
Church, A. H., new analyses of certain minerals; arsenates and phosphates, 101.
—— waste-products, 1256.
Clark, L., voltaic standard of electromotive force, 472.
Claudet, F., new method for the extraction of the precious metals from copper pyrites, 97.
Claus, A., action of ammonia on dichlorhydrin, 1121.
—— azophenylene and azobenzoic acid, 1141.
—— dichlorobenzoic acid, 1141.
—— di-iodhydrin, 1121.
—— preparation of dichlorhydrin, 1120.
—— sulpho-urea, 1131.
Clermont, A., trichloracetic acid and its salts, 745.
de Clermont, P., some reactions of pyruvic acid, 495.
Clève, P. T., occurrence of cuban in Sweden, 851.
Clève, P. T., and O. Hoeglund, the combinations of yttrium and of erbium, 136.
Colley, A., action of fuming nitric acid on acetochlorhydrose, 612.
Comaille, A., parathionic acid and thioamylic acid from the mother-liquors of coralline, 278.
Conroy, Sir John, the dioxides of calcium and strontium, 808.
Cooke, J. B., new mode of filtration, 1158.
de Coppet, L. C., causes of crystallisation in supersaturated solutions, 472.
—— supersaturated solutions of lactates, 165.
Coquillon, J. J., action of platinum and palladium on hydrocarbons, 1214.
Cossa, A., composition of the ash of the leaves and fruit of the lemon tree, 402.
—— composition of the seeds of two varieties of cane, 402.
—— on some properties of gypsum, 1202.
Coupier, A., Brüning's new method of manufacturing rosaniline, 959.
Cownley and Paul. See Paul.
Crafts, J. M., determination of ferric oxide by sodium thiosulphate, 1162.
Crookes, W., atomic weight of thallium, 355.

D.

Dahlen, H., siphon apparatus for filtration, 526.
Dale, R. S., and C. Schorlemmer, aurin, 434.
Dana, J. D., the Corundum region of N. Carolina and Georgia, 257.
—— description of a crystal of andalusite from Delaware Co., Pennsylvania, 257.
—— the quartzite limestone and associated rocks of the vicinity of Great Barrington, Mass., 257.
Daubrée, A., meteorite from Bandong, Java, 357.
Davenport, R. W., some points in the manufacture of malleable iron, 202.
David and Tommasi. See Tommasi.
Davis, G. E., a few facts concerning bleaching powder, 1169.
Davis, R. H., monthly analytical examination of the Harrogate spas, 1089.
Debray, H., note on the decomposition by heat (dissociation) of red oxide of mercury, 1098.
Debray, H., the purple of Cassius, 604.
Deering, W. H., pyrogallate of lead and lead salts, 702.
Déherain, P. P., action of atmospheric nitrogen in vegetation, 1048, 1154.

De Lalande and Prud'homme, reply to criticism on the authors' method of preparing chlorine, 1104.
Demarçay, E., essential oil of Roman camomile, 1226.
—— combinations of titanium chloride with ethers, 1015.
Des Cloizeaux, A., crystalline form and optical properties of amblygonite and montebrasite, 481.
Dewar, J., the chemical efficiency of sunlight, 24.
—— cystine, 74.
—— the specific heat of carbon at high temperatures, 239.
Dewar, J., and W. Dittmar, the vapour-density of potassium, 726.
Dibbits, H. C., dissociation of ammoniacal salts, 33.
Dittler and Liebermann. See Liebermann.
Dittmar, W., specific gravity of legumin and glutin, 283.
Dittmar and Dewar. See Dewar.
Divers, E., union of ammonia nitrate with ammonia, 598.
Doer, W. H., some derivatives of diphenyl-methane, 170.
Donath, E., estimation of paraffin in stearin candles, 1058.
—— examination of juniper berries, 1051.
—— the testing of bees-wax for adulterations, 194.
Donkin, W. F., direct synthesis of ammonia, 1002.
van Dorp, W. A., new synthesis of anthracene, 500.
van Dorp and Behr. See Behr.
Dragendorff, G., adulteration of essential oils with turpentine, and its detection by means of alcohol, 1058.
Draper, J. C., the heat produced in the body, and the effects of exposure to cold, 287.
Draper, J. W., researches in actinochemistry. Second memoir.—Distribution of chemical force in the spectrum, 232.
Drasche, R., serpentine, 1010.
Drechsler, E., analysis of gabbro from Prato in Tuscany, 856.
Ducaisne, P., insalubrity of the waters which supply Versailles, 1060.
Ducoudray, L., poisonous properties of calcium salts, 521.
Dufour, L., diffusion of gases through porous walls, and the accompanying changes of temperature, 835.
Dumas, J. B., action of carbon and iron upon carbonic anhydride at a red heat, 37.
Dumas, J. B., alcoholic fermentation, 80.
—— ferments belonging to the diastase group, 82.
Du Moncel, Th., the condensed discharge of the induction spark, 830.
—— the salts employed by Voisin and Dronier for the bichrome battery, 947.
Dupré, A., specific heat and other physical characters of mixtures of methyl alcohol and water, 466.
Durand-Claye and Lechatelier. See Lechatelier.
Duvillier, E., action of nitric acid on lead chromate, 1005.
—— detection of lead sulphate in commercial lead chromate, 1056.
—— new method of preparing chromic acid, 39.

E.

Edelmann, Th., new method of exhibiting the spectra of metals, 461.
Edger and Glendinning. See Glendinning.
Egleston, T., various uses for blast furnace slags, 656.
Eisfeldt and Thumb, revivification of animal charcoal, 303.
Ekin, C., presence of silver in commercial subnitrate of bismuth, 308.
Elsner, Dr., easy method of cleaning silver, 1072.
van Embden, F., oxidation of allantoïn with ferricyanide of potassium, 1025.
Emmerling, A., the chemical processes in the plant, 79.
—— derivatives of acetone, 496.
Engel, the purification of hydrochloric acid, 841.
Engler, C., and Th. Heine, action of ammonia and its derivatives on ketones in presence of dehydrating agents, 1036.
Engler, C., and A. Leist, acetocinnamone and other products of the dry distillation of cinnamate and acetate of calcium, 901.
—— —— a new method of obtaining ketones, 901.
Erkmann, L., microscopic photography, 307.
Erlenmeyer, E., preparation of ethylene and of ethylene bromide, 1118.
Estor and Béchamp. See Béchamp.
Estor, A., and C. Saint-Pierre, respiratory combustion.—Oxidation of sugar in the arterial system, 398.

Ewald, A., the blood in apnœa, 1247.

F.

Falières, preparation of pure potassium bromide, 135.
—— testing of potassium bromide, 191.
Fauck, A., petroleum exploration in Galicia and America, 308.
Faust, A., constitution of the chlorophenols, the nitrophenols, and the chloronitrophenols, 633.
—— frangulin and frangulic acid, 503.
Faust, A., and H. Muller, (meta?) chlorophenol and its derivatives, 65.
Favre, P. A., replies to observations on the mercury-calorimeter, 132, 838.
Favre, P. A., and C. A. Valson, researches on crystalline dissociation, 31.
—— —— researches on crystalline dissociation.—New method of studying the coercive action of salts on water at different temperatures, 129.
Feddersen, W., thermo-diffusion of gases, 834.
Feltz, E., action of crystallisable sugar on Fehling's solution, 296.
—— estimation of sugar by Barreswil's process, 1060.
Ferrière, E., a new aniline-red, 1272.
—— action of ether upon iodides, 365.
Field, F., note on a reaction of the acetates upon lead salts, with remarks on the solubility of lead chloride, 575.
—— an instance of stability of silver chloride in sunlight, 845.
Filhol, E., on the nature of the sulphur contained in the thermal waters of the Pyrenees, and the changes which alkaline sulphides undergo on dilution, 861.
Fischer, F., estimation of nitric acid in well water by means of indigo, 1054.
Fison and Harcourt. See Harcourt.
Fittica, F., identity of the cymenes from camphor, ptychotis oil, and thymol, 1227.
Fittig, R., a new hydrocarbon from diphenylene ketone, 755.
—— metatoluic acid, 276.
—— phenanthrene and anthracene, 750.
—— phenyl-propyl alcohol, 899.
Fittig, R., and T. Macalpine, ethene-protocatechuic acid, 1144.
Fittig, R., and E. Ostermayer, phenanthrene, a new hydrocarbon from coal-tar, 892.
Fittig, R., and Ira Remsen, synthesis of piperonylic acid, and a new method of forming the aldehyde of protocatechuic acid, 1143.
Fitz, A., alcoholic fermentation by means of *Mucor Mucedo*, 650.
Flavitzky, F., action of aluminium on zinc chloride, 848.
—— secondary amyl alcohol, 45.
—— amylene, 1013.
—— conversion of amylene into amyl alcohol by sulphuric acid, 369.
Fleck, arsenic in the air of rooms, 421.
Fleischer, E., on the behaviour of alum towards the chromates of potassium and barium, and the reasons why a chromic acid alum cannot be formed, 1005.
—— action of magnesium carbonate on calcium sulphate, in presence of common salt, 475.
—— volumetric estimation of sulphuric acid, 529.
Fleischer, A., and A. Kekulé, oxycymene from camphor, 1228.
Flesch, A. P., sulphur-derivatives of cymene, 1029.
Fletcher, T., gas apparatus for heating in laboratories, 540, 542.
Flückiger, F. A., the bitter apple as an article of food, 649.
—— detection of curarine, 654.
—— the hydrocyanides of the alkaloïds, 497.
Fokke, A. P., presence of dissolved earths and phosphoric acid in alkaline blood, 925.
Follenius, O., titration of ferrous chloride with potassium permanganate, 531.
—— quantitative determination of small quantities of uranium, 531.
Forbes, D., production of spiegeleisen, 202.
Forquignon, L., and A. Leclerc, simple arrangement for the use of gas as a means of obtaining high temperatures, 471.
Foster, Le Neve, testing of yellow glass for the dark room of photographers, 948.
de Fougué, general results of the analysis of the Geysers on the island of San Miguel, Azores, 1012.
Franchimont, A., dibenzyl-dicarbonic acid, 390.
—— heptylic acid from Heracleum oil, 55.
Franchimont and Kekulé. See Kekulé.

Freitag, Dr., influence of the smoke from the Freiberg works on the neighbouring vegetation, and on the health of domestic animals, 1155.
Frémy, E., fermentation, 294.
—— generation of ferments, 82.
Frenzel, A., arsenic-glance, 850.
—— beraunite, 851.
—— bismuthoferrite, 478.
—— copper arsenide, 850.
—— pucherite, 253.
Fresenius, R., analysis of the Carlsquelle at Helmstedt, 1213.
—— gravimetric estimation of manganese, 408, 944.
—— analysis of the mineral waters of Bad Ems, 484.
—— analysis of nickel and cobalt ores, an easy and accurate method of separating zinc from nickel and cobalt, 1261.
—— analysis of the Stahlbrunnen at Homburg, 742.
Fresenius and Luck, analysis of commercial amorphous phosphorus, 89.
Freund, A., preparation of propionic acid from lactic acid, 54.
Friedel, C., on a natural compound of ferric and cuprous oxides, and the artificial production of atacamite, 1107.
Friedel, C., and A. Ladenburg, silicic mercaptan and silicic chlorobromide, 53.
—— —— silico-acetic anhydride, 52.
Friedel, C., and R. D. Silva, formation of glycerin from propylene, 1119.
—— —— production of methyl alcohol by the distillation of calcium formate, 1118.
—— —— pivalic acid, a new isomeride of valeric acid, 1126.
—— —— a new tertiary alcohol, and a new method of preparing tertiary alcohols, 488.
Froté, C., benzyl-naphthalene, 891.
Froté, C., and D. Tommasi, action of benzyl chloride on naphthylamine, 1147.
Fuchs, E., vinyl bromide, 46.
Fudakowski, H., contributions to the theory that oxygen becomes active during slow oxidation, 594.

G.

Gabba, L., the recognition of colours on textile fabrics, 654.
Gajevsky, J., curcumin, 760.
Gal, H., the chloride, bromide, and iodide of trichloracetyl, 745.
—— essence of *Unona odoratissima*, 1149.
—— a supposed isomeride of piperidine obtained from the nitro-derivatives of the group C_nH_{2n}, 1025.
Garainow, trimethyl-ethyl-formene, 43.
Garsider, J., milk-testing, 537.
Gatehouse, W., detection of arsenic, 942.
Gaudoin, O., copper-plating of cast-iron, malleable iron and steel, 955.
Gautier, A., compounds in which phosphorus appears to exist in an allotropic state, 352.
Gayon, U., the spontaneous alteration of eggs, 522, 1150.
v. Gegerfeldt, H., action of hypochlorous acid on allyl chloride, 1123.
Gélis, A., action of sulphur upon arsenic, 843.
Gérardin, A., amount of oxygen dissolved in rain and river water, 740.
Gérardin and Schützenberger. See Schützenberger.
v. Gerichten, selenic acid and selenates, 725.
Gerlach, G. F., on certain gas-liquors from gas-works, and on the chlorides contained in certain coals, 302.
Gerland, E., the part borne by chlorophyll in the assimilative action of plants, and the spectrum of leaves, 401.
Gerland, B. W., note on metavanadic acid, 605.
Gernez, D., supposed action of liquids of feeble surface-tension on liquids of strong surface-tension, 722.
—— supposed action of liquid films on supersaturated solutions, 720.
Geuther, A., the hydrates of monobasic acids, 838.
Geuther, A., and F. Brockhoff, action of chlorides on sodium ethylate, 866.
Geyger and Hofmann. See Hofmann.
Gibbs, W., new forms of laboratory apparatus, 1194.
Gilbert, C., estimation of phosphoric acid in Baker Island guano, and in other similar substances, 1160.
Gintl, W. F., diamond fuchsine, 207.
Girard, E., derivatives of pseudotoluidine, 912.
Gladstone, J. H., cymene from various sources, optically considered, 970.

Gladstone, J. H., and A. Tribe, air-battery, 582.
—— —— researches on the action of the copper-zinc couple on organic bodies. Part I. On iodide of ethyl, 445. Part II. On the iodides of amyl and methyl, 678. Part III. On normal and isopropyl iodides, 961.
Glendinning, N., and A. Edger, separation of caustic soda into portions of different strengths on passing from the fused to the solid state, 949.
—— —— a source of error in the valuation of pyrites, 531.
Glössner, G., properties of some of the most frequently occurring fat oils of the vegetable kingdom, with the methods of testing and detecting them, 945.
Gorceix, H., analysis of the gases evolved from the volcano of Nisiros, 1212.
Gore, G., properties of anhydrous liquefied ammonia, 473.
Gorjainow and Butlerow. See Butlerow.
Gottlieb, J., hydrated silicic acid, 351.
Gourdon, C., observations on the influence of metallic deposits on zinc, in presence of acids and alkalis. New heliographic methods, 1203.
De Gouvemain, mineral waters of Vichy and its neighbourhood, 859.
Grabowski, J., naphthalene compounds, 891.
—— action of sulphuric acid on chloral, 878.
Graebe, C., synthesis of carbazol, 1034.
—— a new hydrocarbon isomeric with anthracene, 175.
—— phenanthrene, 894.
—— synthesis of phenanthrene, 633.
—— behaviour of quinones when heated with soda-lime, 635.
Grafe, blue dyeing, 422.
Gräger, A., miniature steam boiler explosion, 1002.
Gräger, R., free acids in wine, 659, 957.
—— preparation of active bone-black, 424.
—— Parisian wood varnish, 307.
Gray, J. St. Clair, and J. B. Lyman, separation and detection of strychnine in judicial cases, 1265.
Gréhant, N., quantitative determination of the carbon monoxide combined with hæmoglobin; elimination of carbon monoxide, 646.
Griess, P., aromatic amido-acids containing alcohol-radicals, 281, 1145.
—— metranitrobenzoic acid, 637.
—— a new series of organic acids, 72.
—— derivatives of uramidodracylic acid, 178.
Griess's phenylene-diamine and dibromobenzene, 640.
Griessmayer, V., new reaction of alkalis with tannic acid, 95.
Griessmayer's hop extract, 659.
Grillone, C. B., crude butyric acid of fermentation, 375.
Grimaux, E., freezing points of mixtures of acetic acid and water, 613.
—— glycerin of the aromatic series, 1139.
—— the hydrates of the fatty monobasic acids, 371.
—— derivatives of naphthalene tetrachloride, 69.
—— derivatives of naphthalene trichloride, 1034.
—— preparation of organic chlorine-compounds, 364.
Grimm, F., phthaleïn of hydroquinone and quinizarin, 1234.
Grimshaw, Harry, ethyl-amyl, 309.
Grimshaw, H., and C. Schorlemmer, oenanthylic acid and normal heptyl alcohol, 1073.
Groshans, J., on the nature of the elements, 132.
Groves, C. E., formation of naphthaquinone by the direct oxidation of naphthalene, 209.
Grucarevic and Merz. See Merz.
Grüneberg, H., kieserite, its properties and applications, 416.
Grünzweig, C., butyric acid from various sources, 373.
Grützner, P., on some chemical reactions of active and inactive muscles, 921.
Gruner, F., Mushet's steel, 955.
Guerout, A., action of sulphurous acid on recently precipitated insoluble sulphides, 349.
Guerri, L., iodised albumin, 512.
Guichard, P., crystallised benzoic acid from gum benzoïn, 902.
Guignet, G., nature of the black spots produced in dyeing with cochineal, 657.
Gunning, J. W., detection of blood-spots, 298.
—— action of yeast on sugar-solutions, 46.

Gustavson, G., double decomposition in absence of water, 589.
—— production of sulphuryl chloride from sulphuric anhydride and boron chloride, 597.

H.

Haarmann, W., derivatives of salicylic aldehyde, 907.
Haase, Kühn, and Bäsecke. See Kühn.
Habedanck, H., purification of oxalic acid, 376.
Habermann, J., conversion of bromoform into carbon tetrabromide, 865.
—— formation of carbon tetrabromide, 1013.
Habermann and Hlasiwetz. See Hlasiwetz.
Hager, H., detection of arsenic in carpets and paper, 943.
—— detection of arsenical colours on paper and paper-hangings, 1057.
—— detection of morphine in quinine, 535.
—— discrimination of gum-arabic and dextrin, 534.
—— preparation of pure hydrochloric acid, 132.
—— testing of crude carbolic acid, 93.
—— testing phosphoric acid for phosphorous acid, nitric acid, and arsenic, 940.
—— testing of potassium bromide for iodine and chlorine, 528.
Hager's method of estimating cinchona alkaloïds, 653.
Hamel, F., a new red colouring matter from aniline, 640.
—— volumetric estimation of oxygen in hydrogen peroxide and other liquids, 936.
v. Hamm, P., analysis of pennine from Rympfischwäng, 1114.
Hanbury, D., Calabrian manna, 284.
Handl, A., saturated and unsaturated solutions, 470.
Hannay, J. B., the inorganic constituents of sound and diseased potatoes, 950.
—— iodine monochloride, 815.
—— new processes for mercury estimation, with some observations on mercury salts, 565.
—— sulphur bromide, 823.
—— a new tellurium mineral, 989.
—— zirconia, 703.
Haushofer, K., the mechanical separation of complex crystals, 1194.
Harcourt, A. Vernon, the sulphurous impurity in coal-gas, 299.
Harcourt, A. V., and F. W. Fison, continuous process for purifying coal-gas from sulphur and ammonia, 1270.
Hardy, adulteration of wax with tallow, 655.
Hartenstein, W., constitution of some glycerin derivatives, 1217.
Harting, P., the physometer, a new instrument for determining the variable volume of air and other bodies, 349.
Hartley, W. N., behaviour of acetamides with sodium ethylate, 991.
—— the standardising of acids, 123.
Hartmann, M., dyeing of straw with aniline green, 305.
Hartsen, F. A., alkaloïds from *Isopyrum thalictroïdes*, 511.
—— researches on chlorophyll, 513.
—— stearoptene in the flowers of *Clandestina rectiflora*, 513.
Harvey, S., improvements in the mode of estimating ammonia by the Nessler test, 1161.
Hasenclever, R., manufacture of caoutchouc, 956.
Hautefeuille and Troost. See Troost.
Havrez, R., mordanting woollens with alum, 206.
Hayes, A. A., the red zinc oxide of New Jersey, 605.
Hecht, O., identity of the hexyl compounds from mannite and dulcite, 370.
Heiden, E., composition and feeding value of clover at different stages of growth, 649.
—— feeding experiments with sophisticated cattle salts, 649.
Heidepriem, F., feeding experiments with sheep, 519.
Heine and Engler. See Engler.
Heinemann, Carl, ash-analysis of the luminous organs of the Mexican cucuyos, 924.
Heinrich, R., influence of manures on weeds, 934.
Heintz, A., on the respiration of beet-root, and the air inclosed in it, 1050.
Heintz, W., on the coagulation of casein by rennet, and on the so-called amphoteric reaction, 514.
—— didenlactamic and nitrosodidenlactamic acid, 268.
—— changes in the position of the hydrogen-atoms on the carbon-skeleton of organic bodies, 152.
Helbig, W., new process in the manufacture of caustic soda, 414.

Hell, C., synthesis of a diethylic suberate, 495.
Helland, A., composition of the olivine and serpentine of Snarum, 607.
—— two pseudomorphoses, 356.
Helmholtz, H., galvanic precipitation of platinum, 463.
Hemilian, W., preparation of organic sulpho-acids, 1021.
—— preparation of sulphobutyric acid, 747.
Hemilian and Melnikoff, function of sulphurous acid when employed for the saccharification and subsequent alcoholisation of grain, 304.
Henneberg, W., amount of carbonic acid in atmospheric air, 595.
—— consumption of water by animals, 929.
Henrici, C. F., action of solid bodies on supersaturated solutions, 347.
Henrivaux, J., colouring of glass by insolation, 463.
—— devitrification of glass, 244.
Henry, L., cyanocarbonic ether, 381.
—— dipropargyl, 1215.
—— ethyloxy-oxalyl chloride, 264.
—— methylene acetochloride, 1117.
—— monochloracetone, 379.
—— the nitrite of ethyl-glycollic acid, 879.
—— propargyl compounds, 1123.
—— volatility of the cyanides of negative radicals, 1129.
—— use of the sodium monochromatic light to appreciate the changes of colour of litmus in alkalimetry, 935.
Herwig, H., expansion of overheated vapours, 242.
Hesse, O., the alkaloïds of cinchona bark, 914.
—— hydroquinone and analogous substances, 386.
Hessenberg, F., calcspar from Rödefjord, Iceland, 857.
—— perowskite, 857.
Heubel, nicotine in tobacco-smoke, 760.
Heumann, K., chlorinated azo-derivatives of benzene, 167.
—— action of copper on ammonium sulphides, 1105.
—— lecture experiments on combustion, 1186.
Heuze, F., preparation of gelatin, 1070.
Hilgard, E. W., soil analyses and their utility, 298.
Hilger, chemical constituents of the eggs of reptiles, 924.
Hille, C., quick method of estimating phosphoric acid, magnesia, and lime, 294.
Hilt, C., composition and technical properties of coals, 1269.
Hinrichs, G., boiling points and molecular volumes of the isomeric chloro-derivatives of the ethylic series, 1014.
—— molecular rotation of gases, 838.
Hinterberger, F., excretin, 919.
Hirn, M., apparent variability of the law of Dulong and Petit, 587.
Hirschberg, A., boric acid as a preservative of milk and beer, 100.
—— prevention of mould in solutions of gum, 100.
Hlasiwetz, H., oxidation-products of some of the alkaloïds, 1041.
—— action of carbon sulphide on various amides, aldehydes, and alcohols, 497.
—— derivatives of sulphocarbamic acid, 265.
Hlasiwetz, H., and C. Habermann, glutamic acid, 512.
Hlasiwetz, H., and J. Kachler, derivatives of sulphocarbamic acid, 628.
Hobrecker, F., reduction-products of nitracetamide compounds, 173.
Hoch, K., carbon chlorides, 364.
Hofmann, A. W., formation of phosphines with the aid of reduction processes, 883.
—— the phosphines of the propyl, butyl, and amyl series, 882.
—— phosphinic acids, 883.
—— preparation of phosphonium iodide, 842.
—— propene-diamine, 881.
—— violet derivatives of rosaniline, 913.
Hofmann, A. W., and A. Geyger, action of sodium on chlorinated nitro-compounds, 168.
Hofmann, K. B., the spectra of phosphoretted hydrogen and ammonia, 340.
Hofmeister, V., effect of artificial addition of phosphates to the food of lambs, 1153.
Holland, P., estimation of sulphur in pyrites, 530.
Hoorn, testing of butter for adulterations, 1064.
Hoppe-Seyler, F., the production of light by atomic movements, 341.
Horner, C., spectra of some cobalt-compounds in blowpipe chemistry, 1161.
Horsin-Déon, P., the sucrocarbonates of lime, 612.
Houzeau, A., decolorising power of concentrated ozone, 37.

Houzeau, A., estimation of ammonia in coal gas, 409.
—— proposed new method of estimating carbon dioxide, 938.
—— volumetric estimation of small quantities of arsenic and antimony, 407.
Houzeau, A., and A. Renard, application of concentrated ozone in organic chemistry: ozobenzene, 610.
Howard, D., optical properties of some modifications of the cinchona alkaloïds, 1177.
Howard, E., on the leaves of *Cinchona succirubra*, 524.
Hübner, H., chloral and acetonitril, 626.
—— chlorotoluenes, 1135.
—— estimation of iodine in presence of chlorine and of bromine, 939.
Hübner, H., and O. Brenken, chlorosalicylic acid, 756.
—— —— phenols, 751.
Hübner, H., and P. Haesselbarth, derivatives of bromotoluene, 886.
Hübner, H., and P. Retschy, amidobenzene and the preparation of metadiamidobenzene, 1146.
Hübner, H., and W. Schneider, isomeric dinitrophenols, 1030.
Hübner, H., and G. Weiss, conversion of benzoic acid into metachlororthoxybenzoic acid, 756.
Hübner, H., and R. D. Williams, dibromo- and nitrodibromobenzenesulphonic acid, 1039.
Hunt, T. Sterry, decarbonisation of iron, 98.
Hunter, C. D., effect of potassium salts on the growth of potatoes, 1255.
Hunter, John, obituary notice of, 777.
Husemann, T., is pure carbolic acid (phenol) non-poisonous? 79.
Huson, C., new method of testing with Bunsen's flame, 1158.
Husson, M., jun., action of iodide of nitrogen on starch, 46.

I.

Igelström, L. J., manganophyll, 150.
Ivanow-Gajewsky, curcumin, 504.

J.

Jacinsky, F., estimation of juice in sugar-beets, 297.
Jacobi, galvanic reduction of iron under the influence of a powerful electro-magnetic solenoïd, 831.
Jacobsen, C., solvents for indigo, 179.
Jacobsen, O., gases contained in sea water, 860.
Jacobsen, R., carbon pictures on gypsum or earthenware plates, 424.
Jacquemin, E., action of chlorine on a mixture of phenol and aniline, 1147.
—— action of iodic acid on pyrogallic acid, 1239.
—— action of iron salts on pyrogallic acid, 1259.
Jaffé, origin of indican in urine, 516.
Jannetag, E., conduction of heat in crystallised bodies, 838.
Janowsky, J. V., arsenetted hydrogen, 842.
—— the different methods of estimating phosphoric acid in presence of iron oxide, alumina, potash, and magnesia, 91.
Janssen, quantitative spectral analysis, 1258.
Jean, F., analysis of soaps, 195.
Jehn, Carl, arsenical hydrofluoric acid, 528.
—— reactions occurring in the preparation of carbon monoxide from potassium ferrocyanide, 497.
Jeltekow, A., preparation of glycols, 1016.
Jicinski, F., improvements in the determination of the amount of juice in sugar-beet, 1262.
—— practical application of titration to the estimation of the alkalinity of juice in the manufacture of sugar, 1060.
Jörgensen, S. M., thallium compounds, 475.
Joffre, J., the mineral oils of Bruxière-la Grue and Cordesse, 1013.
Johnson, W., influence of acids on iron and steel, 848.
Jolyet, F., and T. Blanche, experimental researches on the physiological action of nitrogen monoxide, 1154.
Joulin, J., production of electricity by mechanical actions, 839.
Joulie, H., commercial analysis of nitrates, 530.
—— assimilability of phosphates, 766.
Joulin, L., decomposition of metallic carbonates by heat, 844.
—— researches on saline decomposition, 589.
Jünemann, refining of sugar and recovery of sugar from molasses by alcohol, 99.
Jungfleisch, E., conversion of dextrotartaric into racemic acid, 166.

Jungfleisch, E., reciprocal transformation of inactive tartaric and racemic acid, 270.
—— synthesis of circularly polarising organic bodies. Construction of dextro- and lævo-tartaric acids from ethylene, 743.

K.

Kade, R., dibenzyl disulphonic acid, 1240.
Kämmerer, L., ammonium molybdate, 354.
Keegau, V. E., a method of rendering wood and other fibrous substances suitable for the manufacture of paper, 1069.
Kekulé, A., constitution of camphor, 1228.
—— action of phosphorus pentachloride on phenolparasulphonic acid, 1239.
—— action of sulphocyanates on benzoic acid, 636.
—— new conversion of turpentine into cymene, 889.
Kekulé, A., and A. Franchimont, benzophenone chloride, and the formation of anthraquinone in the preparation of benzophenone, 171.
—— —— triphenylmethane, 171.
Kekulé, A., and A. Fleischer. See Fleischer.
Kekulé, A., and A. Rinne, constitution of the allyl compounds, 1017.
Kennedy, G. W., solanine in *Solanum Lycopersicum*, 918.
Kenngott, A., miloschin, 853.
—— winkworthite, 150.
van Kerckhoff, P. J., slow combustion, 127.
Kerner, G., influence of crystalline and amorphous quinine on the white blood corpuscles, and on the formation of pus, 647.
Kessler, F., analysis of pig iron and steel, 408.
—— investigations on the Bessemer process, 299, 540, 542.
—— manganese in steel, 204.
—— preparation of pure manganous oxide, 355.
Khern's iron furnace for use with lignite, 98.
Kick, Fr., Mushet's special steel, 204.
Kielmeyer, A., iron liquor for calico printing, 1272.
—— use of sodium aluminate in calico-printing, 1271.
Kingzett, C. T., formation of sodium sulphide by the action of hydrogen sulphide on sodium chloride at high temperatures, 456.
Kirchmann, W., oxidation of mercury, 476.
Kirchmann, W., simplification of the method of gilding iron by the dry process, 418.
Kitchin, A., estimation of phosphoric acid as uranic phosphate, 942.
Klein, C., contributions to crystallography, 385.
Kletzinsky, B., basic ferric chromate, 657.
Klever, glycerin as a solvent, 47.
Knab, O., determination of extract in beer or wort, 95, 655.
Knapp, removal of chalk from animal charcoal by acetic (pyroligneous) acid, 99.
Knap, A., pyrochlore from Schalingen, 479.
v. Kobell, F., kjerulfin, a new mineral from Bamle in Norway, 1206.
—— the later montebrasite of Des Cloizeaux (Hebronite), 1113.
v. Kobell, new reaction for bismuth, 531.
v. Kobell, F., wagnerite, 1207.
Koch, J., fisetin, 72.
Köhler and Schimpf, the chemical relation of phosphorus to turpentine-oil, and the action of the latter as an antidote in phosphorus poisoning, 179.
König, J. A., new hydrocarbon from vegetable fats, 1215.
—— a new beech-blight, 1156.
—— digestibility of the fat of meadow-hay, 648.
König, determination of cellulose, 534.
König, J. and J. Kiesow, nature of the fats in meadow-hay, 648.
Körner, W., two nitrophenolsulphonic acids, 757.
Körner, W. and E. Paternò, iodobenzene-parasulphonic acid, 757.
Köttnitz, Max, derivatives of mucic acid, 163.
Kohlrausch, F., electromotive force of very thin gas strata, 348.
Kohlrausch, O., method of obtaining comparable results in the commercial valuation of raw sugars, 298.
—— influence of aluminium sulphate and lead acetate on the polarisation of sugar-solutions, 92.
Kolb, J., composition of chloride of lime, 200.
Kolbe and Zitowitsch, gases enclosed in certain lignites, 43.
Kollarits, M. and V. Merz, synthesis of aromatic ketones, 1035.
de Koninck, L., on some Belgian minerals, 1114.
Kopp, E., brasilin and resorcin, 899.

Kopp, E., the so-called "chemical carbon," 1276.
—— comparative examination of purpurates and isopurpurates, 75.
—— determination of melting points, 30.
—— diphenylamine as a test for nitrous and nitric acids, 91.
Kraft, A., comparison of the different processes for estimating alcohol, 1262.
Kraus, C., autumnal colouring of leaves and formation of vegetable acids, 1049.
Krause, O., magnesium oxychloride, 136.
Krell, G., substitution-products of dimethylaniline, 279.
Krüger, J., quick reduction of silver from solution by means of phosphorus, 245.
Kühn, Haase and Bäsecke, digestibility of lucerne in the fresh state and as hay, 1156.
Kuhlberg and Beilstein. See Beilstein.
Kuhlmann, F., bromine and iodine in apatite, 357.
Kuijper, chemico-legal detection of alcohol, 92.
Kullhem, A., action of sodium amalgam on dinitroheptylic acid, 1019.
Kulz, E., estimation of sulphur and of taurocholic and glycocholic acids in bile, 536.
—— estimation of uric acid in diabetic urine, 536.
Kurbatow, A., preparation of *a*-sulphopropionic acid, 873.

L.

Ladenburg, A., application of electrolysis to the determination of molecular weights, 26.
—— reduction of ethyl orthoformate, 48.
—— pentachlorobenzenes, 166, 499.
—— reduction-products of silicic ether and its derivatives, 49.
—— aromatic compounds containing silicium, 1026.
—— attempt to synthesize tyrosin, 642.
—— action of zinc-ethyl on silicium methyl-ether, 488.
Ladenburg and Friedel. See Friedel.
Lamunsky, L., heat-spectrum of solar light and of the lime light, 349.
Lamy, A., notice on the mutual action of hydrochloricacid and oxygen on certain metallic oxides in producing a continuous stream of chlorine (Deacon's process), 1103.
Landolph, F., derivatives of cymene, 1227.
Landolt, R., refraction-equivalents of the elements, carbon, hydrogen, and oxygen, 460.
v. Lang, V., crystallographic notes, 471.
Lange, O., conversion of glycerin into acetone, 627.
—— a polymeride of hydrocyanic acid, 628.
Langer, Th., analysis of the mineral water of Mattigbad, Mattighofen, Upper Austria, 1012.
Lankester, E. R., hæmoglobin, 398.
v. Lasaulx, A., ardennite, a new mineral containing vanadium, 854.
—— contributions to micromineralogy, 257.
—— staurolite, 854.
Lasne, H., a new form of aspirator, 837.
Laspeyres, H., occurrence of aluminite near Halle, 853.
—— hygrophilite, a new mineral of the Pinite group, 1207.
—— chemical composition of maxite, 41.
—— maxite and lead-hillite, 1112.
Latschinoff, diphenyl, 749.
Laube, G., arseniferous uranium mica (zeunerite) from Joachimsthal, 1010.
—— a pseudomorph of dolomite after garnet, 857.
Laubenheimer, A., occurrence of benzyl alcohol in liquid storax, 65.
—— ethyl fumarate, 56.
—— action of potassium permanganate on milk-sugar, 46.
—— constitution of sodium ethylate, 44.
Laujarroic, experiments relating to putrefaction, disinfection, and the preservation of organic substances, 763.
Laur, methods of extracting silver in Mexico, 416.
Lauth, C., aniline black, 1069.
—— dyeing wool with aniline-green, 959.
—— action of hydrochloric acid on the compound ammonias, 910.
Le Blanc, F., ozone and peroxide of hydrogen, 242.
Lechartier, E., and Bellamy, fermentation of fruits, 293.
Lechartier, G., artificial formation of pyroxene and peridote, 40.
Lechatelier and Durand-Claye,

amount of phosphoric acid in coal-ashes, 1066.
Leclerc, A., estimation of manganese in soils and vegetables, 193.
Leclerc and Forquignon. See Forquignon.
Lecoq de Boisbaudran, the spectrum of erbium, 829.
—— remarks on some peculiarities observed during researches in spectral analysis, 1257.
Leeds, aventurine orthoclase, 248.
Leeson, H. B., obituary notice of, 778.
Lefranc, atractylic acid, 638.
Leibius, A., separation of gold from silver chloride, 728.
Leist and Engler. See Engler.
Lepage, J., estimation of potassium bromide on potassium iodide, 528.
Leppert and Nencki. See Nencki.
Leuchs, G., accidental formation of calcium rosolate, 275.
—— detection of water in essential oils, 296.
Leuchs, J., gold monochloride, 245.
L'Hôte, L., production of ammonia sulphate from nitrogenous waste, 1066.
Lieben, A., behaviour of ether in contact with various substances, 263.
Lieben, A. and A. Rossi, normal butyl compounds and valerianic ether, 367.
—— —— caproic acid, normal and ordinary, 267.
Liebermann, C., cœrulignone, a product of the wood-vinegar manufacture, 70.
—— derivatives of cœrulignone, 1033.
—— monoxyanthraquinone and anthraflavic acid, 275.
—— decomposition of rosaniline by water, 1241.
Liebermann, C. and A. Dittler, the isomeric α- and β-derivatives of naphthalene, 1232.
—— —— pentabromo-resorcin, 502.
Liebig, Max., on the determination of oxygen in the gases from the lead-chambers, and on some new apparatus used in gas-analysis, 935.
Lielegg, A., preparation of chrome-alum, 848.
Liesegang, E., cement for glass and porcelain, 97.
—— reproduction and inversion of negatives, 1070.
Lieventhal, E., estimation of caffeine in tea-leaves, 411.
Limpricht, H., benzylsulphonic chloride, 1040.
—— on a compound, $C_{14}H_8S_2$, 1032.
—— mucic acid and pyromucic acid, 621.
—— phenanthrene, 897.
Linnemann, E., estimation of chlorine, bromine, and iodine by Carius's method, 527.
Lippmann, G., relation between electric and capillary phenomena, 1094.
Little, A. N., examination of some samples of *ferrum reductum*, 298.
Liversidge, A., supersaturated saline solutions, 469.
Ljubavin, N., action of ammonia on valeraldehyde, 626.
—— valerinitrine, 1023.
Lockyer, J. N., researches in spectrum analysis in connection with the spectrum of the sun, 994.
—— experimental researches on the solar spectrum, 340.
Löwe, J., pure gallotannic acid, 748.
—— organic elementary analysis, 1057.
Löwenthal, J., testing of indigo, 96.
Loiseau, E. F., artificial fuel from coal-dust, 420.
Loiseau, M., estimation of sugar by Barreswil's method, 1164.
Lommel, E., action of coloured light on assimilation by plants, 292.
Longuinine, heat developed during the formation of the potassium and sodium salts of acetic and trichloracetic acid, 1100.
—— alleged synthesis of terebene, 383.
Lorenz, L., determination of degrees of temperature in absolute units, 465.
Lorin, action of oxalic acid on poly-atomic alcohols, 1219.
—— oxalin, 1122.
Lorscheid, J., red coloration of white lead, 658.
Losanitch, S. M., action of benzoic acid on phenylic mustard oil, 758.
Lothar-Meyer, description of a pressure regulator, 349.
de Luca, S., chemical researches on the cyclamen, 764.
—— stalagmitic formations of the Solfatara of Puzzuoli, 478.
—— action of the volcanic earth of the Solfatara of Puzzuoli on the diseases of the vine, 523.
Luck and Fresenius. See Fresenius.
Lucke, E., detection of carbon disulphide in mustard oil, 1054.
Ludwig, C., the chemical formula of epidote, 251.

Ludwig, H., constituents of the ash of various parts of the coffee tree, 525.
—— the constitution of atacamite, 1010.
—— igasuric acid, 904.
—— constituents of the seed of the yellow lupine, 650.
—— analysis of a soil (salt earth) from the primeval forest of Brazil, 483.
de Luynes, V., Prince Rupert's drops, and the annealing of glass, 723.
Lyman and Gray. See Gray.

M.

Märker, determination of nitrogen in organic substances, 532.
Mabony, C. A., loss through volatilisation in the Cornish copper assay, 192.
Maikopar, A., action of phenol and caustic potash on dinitrochlorobenzene, 1026.
Malassez, L., the number of the red blood-corpuscles of mammals, birds, and fishes, 289.
Mallard, M., action of silica and analogous oxides on sodium carbonate, 135.
—— action of silica and some analogous oxides on sodium carbonate at high temperatures, 243.
Mallet, R., volcanic energy, 362.
Mallo, M., action of ethyl oxalate on naphthylamine, 913.
Maly, R., sulphohydantoïn or glycolyl sulpho-urea, 1131.
Marcet, W., nutrition of muscular and pulmonary tissue, 77.
—— the nutrition of muscular and pulmonary tissue in health, and when affected by disease from phthisis. Part II, 186.
Martens, K. H., estimation of sugar, 1059.
Martensen, G., temperature-regulator for gas and lamp-flames, 471.
Martin, L., influence of a limited supply of air on the sulphuretted waters of Eaux-Bonnes, 861.
Mascart, M., comparison of different electrical machines, 839.
Mascazzini, A., new method of assaying lead ores, 1055.
Maschke, O., amorphous silicic acid, 243.
—— development of heat by the friction of liquids against solids, 243.
Masters, M. T., influence of various manures on different species of plants, 522.
Mathieu, E., and V. Urbain, the part played by gases in the coagulation of albumin, 1247.
Mauthner, J., analysis of eclogite from Eibiswald, in Styria, 1116.
—— decomposition of neurine, 630.
v. Mayer, E., gases enclosed in coal, 483.
Mayer, E. L., and C. R. A. Wright, oxidation and decomposition-products of morphine derivatives, 1082.
—— —— the polymerides of morphine and their derivatives, 211.
Mazzara and Paternò. See Paternò.
Medin, O., on Hager's method of estimating cinchona alkaloïds, 653.
Meilly, F., aconic acid, 875.
van Melckebeke, E., recognition of the presence of potassium bromide in potassium iodide, 527.
Melnikoff and Hemilian. See Hemilian.
Melsens, F., behaviour of potassium iodate in the animal organism, 398.
Melsens, M., sulphurous and chlorosulphuric acid. Combination of chlorine and hydrogen in the absence of light, 724.
—— action of low temperatures on wines and spirits, 1173.
Mendelejeff, D., atomic weights of cerium, lanthanum, and didymium, 1004.
Mène, C., methods of analysing natural phosphates, 1260.
—— determination of phosphoric acid in manure and in fossil phosphates, 942.
van der Mensbrugghe, G., reply to Gernez's criticism of Mensbrugghe and Tomlinson's theory of the action of liquid films, 721.
Menschutkin, N., parabanic acid, 758.
Merck, hyoscyamine, 641.
Merget, M., photochemical researches on the use of gases as developers, 1169.
Merrick, J. M., electromagnetic deposition of nickel, 204.
Merz, V., and Grucarevic, action of the chlorides of aromatic acids on hydrocarbons, 1233.
—— —— synthesis of ketones, 635.
Merz and Kollarits. See Kollarits.
Merz and Weith, action of bromobenzene on aniline, 73.
—— —— diphenylamine, 74.
Metz, A., the crystalline precipitate produced in beer on the addition of potassium carbonate, 658.
Meunier, St., characters of the crust produced upon terrestrial rocks by atmospheric agency, compared with the black coating of certain meteorites, 141.

Meunier, St., lithological analysis of the meteorite from the Sierra de Chaco. Mode of formation of logronite, 358.
v. Meyer, E., the gases evolved from the springs at Inselbad (Paderborn), and their application to inhalation, 360, 1212.
—— formation of ketonic acids, 496.
Meyer, L., on the systematisation of inorganic chemistry, 591.
Meyer, O. E., internal friction of gases, 838.
—— transpiration of gases, 468.
Meyer, V., action of glacial acetic acid on chloral, 878.
Meyer, V., and H. Haffter, volumetric determination of chloral, 1163.
Meyer, V., and W. Michler, preliminary notice on the action of sodium amalgam on dinitrobenzoic acid, 1141.
Meyer, V., and A. Rilliet, nitrocompounds of the fatty series, 261.
Meyer, V., and O. Stüber, the aromatic amines, 507.
Meyer, V., and C. Wurster, synthesis of diphenylmethane, 1225.
—— —— ethyl sulphocyanate, 1224.
—— —— nitro-compounds of the fatty series, V, 611.
Michaelis, A., aromatic phosphorus compounds, 1148.
—— researches on supersaturation, 470.
—— on Barbaglia and Kekulé's explanation of the action of phosphoric chloride on sulphochlorides, 134.
Michaelis, A., and O. Schifferdecker, existence and dissociation of sulphur tetrachloride, 132.
Millardet, A., observations on a recent communication by M. Chautard on the absorption-bands of chlorophyll, 996.
Mills, E. J., researches on elective attraction, 342.
Mitchel, C. H., gun-cotton and collodion preparations, 540.
Mohr, F., preparation of acetic acid, 613.
—— the nature of the alkaline chromates, 354.
—— an improved gas-holder, 36.
—— estimation of the hardness of spring waters, 1054.
—— precipitation of magnesia, 944.
—— estimation of nitric acid, 91.
du Moncel, Th., effects produced by electric currents on mercurial electrodes immersed in various solutions, 833.
—— effect of surrounding the negative electrode of a carbon battery with charcoal powder, 25.
Monnier's process for copper extraction, 417.
Morawski, T., monochloritamalic acid, 1221.
Morell, A., preparation of alcoholic lakes, 960.
Morgan, W., composition of ultramarine, 475.
Morton, H., fluorescent relations of certain hydrocarbons, 233.
—— fluorescent relations of anthraquinone and chrysogen, 235.
Moschini, L., and F. Sestini, experiments on the making of wine according to Chaptal's process, 1275.
du Mothay, Tessié. See Tessié du Mothay.
Moutier, J., heat of transformation, 998.
—— vapours emitted at a given temperature by the same body in two different states, 838.
Müller, A., Berlin water supply and town purification, 1267.
—— analysis of cheese, 1265.
—— affinity in solutions of ferric chloride, 847.
Müller, J., Bunsen's chromic acid battery, 125.
—— the value of carbon filters in purifying drinking waters, 302.
—— method of distinguishing pure ground coffee from coffee substitutes, 1065.
—— water-filters of moulded charcoal, 1268.
Müller, M., hæmoglobin and quinine, 288.
Müller, Max, contributions to the knowledge of monochlorosulphuric acid, 841.
Müller, O., preparation of mandelic acid, 1038.
Müller, W., a beetle eudiometer, 292.
—— the breathing of frogs, 1154.
Müller and Faust. See Faust.
Müntz, A., properties and composition of a cellular tissue diffused throughout the organism of the vertebrata, 920.
—— saccharine matter in mushrooms, 759.
Mulder, E., chlorinated derivatives of acetone, 379.
—— diglycollamic diuramide, 382.
—— lecture experiments with the thermo-analyser, 526.
—— the metallic derivatives and constitutional formula of cyanamide, 1023.

Muschketow, J., wolynite, 1211.
Muspratt, F., obituary notice of, 780.
Muter, J., analysis of milk for clinical purposes, 537.
Myers, J., regulation of gas-flames for temperatures above the boiling point of mercury, 129.
—— decomposition (dissociation) of mercuric oxide by heat, 603.
—— reactions of various metallic salts, 845.
Mylius, E., carbonic and sulphocarbonic ethers of isobutyl alcohol, 266.
—— carbonyl-compounds of isobutyl, 872.
—— isobutyl-sulphonic acid, 267.

N.

Nasse, O., decomposition of albuminoïds by baryta, 514.
—— researches on the albuminoïds, 760.
Nencki, M., dehydration in the animal body, 287.
—— sulpho-urea, 1130.
—— researches on the uric acid group, 282.
Nencki, M., and W. Lippert, action of acetic anhydride on ammonium sulphocyanate, 1224.
Nencki and Ziegler, oxidation of camphor cymene in the animal organism, 64.
Nessler, preparation of floor-wax, 307.
Nessler, J., ash of the wood of differently manured vines, 1253.
—— brittleness of the bones in horned cattle, 924, 1244.
Neubauer, C., detection of traces of arsenic and phosphorus in toxicological researches, 943.
—— pressure of the sap in the vine, 293.
—— qualitative analysis of vine-leaves, 933.
Neyreneuf, V., action of electricity on flames, liquids, and powders, 839, 1093.
Nicholson, E., analysis of the water of the river Mahanuddy, 229.
—— the earth-salts of Bellary (India), 151.
Niedzwiedki, conversion of garnet into chlorite, 855.
Niess, F., aphrosiderite, 1115.
—— a cobaltiferous magnesium sulphate, 1114.
Nollino, G., composition of "candle-nuts" and of the nuts and oil-cake of the cocoa palm, 86.
Nordenskjöld, nohlite from Nohl in Sweden, 479.
Nowak, J., chloroform as a solvent and means of separation for vegetable poisons in forensic investigations, 412.
—— use of chloroform in forensic chemistry, 535.
Nowak and Seegen. See Seegen.
Nussbaum, Moritz, continuation of researches on respiration in the lungs, 929.

O.

v. Oettingen, A., spectrum of the aurora borealis, 242.
Okulitsch and Werigo. See Werigo.
Oppenheim, A., oil of lemon, 1226.
—— action of phosphorus on alkaline solution of metals, 244.
—— ethers of pyroracemic acid, 377.
Orlewski, A., new apparatus for the evolution of chlorine, 96.
Oster, J. B., testing hydrochloric acid for arsenic, 943.
Osterland, C., and P. Wagner, composition of ashes from Vesuvius, 1011.
Ostermayer, E., and R. Fittig, a new hydrocarbon from coal-tar oil, 176.
Ott, A., flavin, 643, 959.
—— utilisation of tin-plate cuttings, 308.
—— the treatment of wine with air during fermentation, 660.
Otto, R., a new source of struvite, 1107.
Oudemans, A. C., drying chamber with mica walls, 412.
—— estimation of alcohol in commercial chloroform, 1059.
—— influence of inactive solvents on the specific rotatory power of active substances, 461.
—— simple method for the quantitative estimation of alcohol in the chloroform of commerce, 533.
—— solubility estimations in general, and solubility of cinchonine in alcohol, chloroform, and mixtures of the two, 410.

P.

Paijkull, S. R., zirconium-compounds, 1105.
Pander, action of brucine, emetine, and physostigmine on the organism, 79.
—— detection of brucine, emetine, and physostigmine, 93.

Papillon, F., experimental modifications of the composition of bones, 518.
Papillon and Rabuteau. See Rabuteau.
Parry, John, reduction of pure anhydrous ferric oxide by pure carbon in vacuo, 1006.
Paschutin, V., separation of digesting ferments, 1064.
Pasteur, L., production of alcohol by fruits, 293.
—— new process for brewing, 958.
—— fermentation, 294.
—— new facts for the theory of true fermentations, 83.
—— new experiments demonstrating that wine-producing yeast-germs are not formed within the grape, 82.
—— improvement in wines by heating, 99.
Patera, A., salt manufacture, 413.
—— fire-clays from Carniola, 952.
Paternò, E., new mode of synthesis of acids of the aromatic series, 635.
Paternò, E., and W. Körner. See Körner.
Paternò, E., and G. Mazzara, monochloracetal, 1217.
Paternò, E., and G. Pisati, trichloracetal and tetrachlorethyl oxide, 158.
Paul, C., tinning of brass, copper, iron, &c., in the wet way, 955.
Paul, B. H., and A. J. Cownley, valuation of commercial anthracene, 1263.
Peligot, E., the alloys employed for gold coinage, 1067.
—— distribution of potash and soda in plants, 929.
Pellet, H., determination of the total nitrogen in manures, 1161.
Pellet and Champion. See Champion.
Pelouze, E., and P. Audouin, new process for the condensation of vapours held in suspension by gases, 1194.
Perepelkin, A., assimilation of phosphates by barley, 87.
Perkin, W. H., anthraflavic acid, 19.
—— anthrapurpurin, 425.
Petersen, P., and F. Soxhlet, the cartilage of the shark, 1243.
Petersen, Th., constitution of benzene derivatives, 1132.
—— the greenstones, 733.
—— the basalt and hydrotachylyte of Rossdorf, Darmstadt, 1211.
—— guadalcazarite, a new mineral, 42.
Petersen, Th., and R. Böttger. See Böttger.
Petit, A., antifermentescible substances, 84.
Petit, A., narceine hydrochloride, 510.
Petrieff, A., the azoderivatives of liquid and solid nitrotoluene, 1027.
Petrowsky, D., composition of the grey and white substances of the brain, 922.
v. Pettenkofer, Max., amount of carbon dioxide in the air of the soil of Munich at different depths and at different times, 361.
—— rapid dissemination of gases of different specific gravities, 720.
v. Pettenkofer and Voit, results of feeding with flesh and fat, 1047.
Petzholdt, A., hepatic limestone from Algeria, 482.
Pfankuch, F., new organic compounds and new modes of preparing them, 362.
Pfeffer, W., influence of the spectrum colours on the decomposition of carbon dioxide by plants, 400.
Pfeiffer, C., preparation of rubidium from beet-root, 474.
—— working of beet-root ash, 99.
Philippi, O., and B. Tollens, the dibromopropionic acid obtained from propionic acid, 1018.
Phillips, E. L., oxyammonias and phosphine bases, 284.
Phillips, J. A., composition and origin of the waters of a salt-spring in Huel Seaton mine, 857.
Phipson, T. L., anthracenamine, 641.
—— a curious reaction of benzoic, salicylic, and hippuric acids, 1145.
—— phenolcyanine, 1041.
Piccard, J., chrysin, 1236.
—— some constituents of poplar buds, 1237.
Pichard, P., colorimetric method for the estimation of manganese in iron ores, cast iron, and steel, 407.
Picot, M., antiseptic properties of sodium silicate, 294.
Pierre, Is., boiling point of liquefied sulphur dioxide, 597.
Pierre, Is., and E. Puchot, action of the principal derivatives of amylic alcohol on polarised light, 1017.
—— —— the law of boiling point of homologous organic compounds, 257.
—— —— new researches on butyric acid, 615.
—— —— on several groups of isomeric bodies derived from the fermentation alcohols, 258.
—— —— isobutyric acid, 55.
—— —— propionic acid, 615.
—— —— propyl-compounds, 44.
—— —— valeric acid, 55, 874.
Pike, W. H., benzoyl-sulpho-urea, 1132.

Pile, W. H., new application of tube-hydrometers, 131.
Pillitz, W., methods of analysing grain, 1061.
Pisani, F., analysis of arite, 479.
—— analysis of jeffersonite, 479.
—— analysis of lanarkite from Leadhills, 480.
—— a new silico-aluminate of manganese containing vanadium, from Salm-Château, Belgium, 355.
—— a new silver amalgam, 356.
Plascuda and Zincke, benzyltoluene, 1225.
Plosz, P., and E. Tiegel, the saccharifying ferment of the blood, 1245.
Plugge, P. C., new reaction of phenol, 533.
Podolinski, S., expulsion of carbonic oxide and nitric oxide from blood, 397.
Pollacci, E., preparation of potassium and sodium hydrate, 474.
—— chemical researches on the ripening of grapes, 402.
Popoff, A., amylic alcohol, 1017.
—— oxidation of ketones, 1037.
Possoz, L., copper-solutions for the estimation of sugars, 410.
Post, J., nitrophenolsulphonic acid, 173.
—— orthonitrophenolsulphonic acid, amidophenolsulphonic acid, and a new nitrophenol, 903.
Pott, R., aspartic acid produced in the oxidation of conglutin by potassium permanganate, 628.
—— meat-flour from Fray Bentos, 1275.
—— analysis of river mud, 1214.
Pratesi, L., amidomonochlorobenzenesulphonic acid, 639.
Prazmowski, modification of the optical saccharimeter, 829.
Prescott, A. B., sulphophenic acid, 284.
Prestel, Is peat-smoke injurious to vegetation? 647.
Priwoznik, action of a sulphur-spring on cast iron, 1106.
Prud'homme, J., rosolic acid, 902.
Prud'homme and De Lalande. See De Lalande.
Prunier, L., ethyl-acetylene and its identity with crotonylene, 1014.
—— polypropylenic hydrocarbons, 486.
—— preparation of propylene and butylene bromides, 487.
Puchot and Pierre. See Pierre.
v. Purgold. Th., action of ethyl chloride on vegetable fats, 1216.
Puscher, E., bleaching of rape, poppy, and linseed oils, 100.
—— colouring and drying of natural flowers, 307.
Puscher, E., sugar-lime as a solvent for glue, 306.
Pusirewsky, P., nefediewite, a new mineral, 1210.

Q.

Quesneville and Tommasi. See Tommasi.
Quinquaud, E., estimation of hæmoglobin in blood, 1245.
—— variations of hæmoglobin in the zoological series, 1245.
—— the respiration of fishes, 929.
Quinquaud and Schützenberger. See Schützenberger.

R.

Rabuteau, the leaves of *Eucalytus globulus*, 403.
—— the toxic effects of the iodides of tetramethylammonium and tetramylammonium, 763.
—— physiological action of quinine and of ferric chloride, 398.
—— variations in the amount of urea excreted under the influence of caffeine, coffee, and tea, 1248.
Rabuteau and Papillon, antiseptic properties and physiological action of sodium silicate, 85, 400.
—— —— observations on some liquids of the organisms of fish, crustaceans, and cephalopods, 1150.
Radziswewski, B., action of bromine on boiling ethyl-benzene, 1028.
—— deoxybenzoïn and analogous bodies, 1037.
—— formation of stilbene, 889.
Rakóczy, S., alcoholic vapour blowpipe, 92.
v. Rakowski, P., reduction of mononitronaphthoic acid, 391.
Rammelsberg, C., the atomic weights of the cerium metals, and the salts of ceroso-ceric oxide, 601.
—— the atomic weight of uranium, 247.
—— graphite, 732.
—— spontaneously inflammable hydrogen phosphide from phosphonium iodide, 601.
—— hypophosphites, 1.
—— behaviour of ozone towards water, 1103.
—— reducing power of phosphorous and hypophosphorous acid and their salts, 13.
—— note on silicic acid, 242.
—— constitution of vesuvian, 1107.

Ranke, J., researches on the electricity of plants, 713.
Ransome's new artificial stone, 416.
Raoult, F. M., action of gaseous ammonia on ammonium nitrate, 1201.
—— conversion of cane-sugar into glucose by the action of light, 490.
—— action of a copper-cadmium couple on a solution of cadmium sulphate, 464.
—— apparent replacement of certain metals by themselves in their solutions, 464.
vom Rath, G., crystallographic description of anorthite, 257.
—— the twin-laws of anorthite, 857.
—— mineral resembling cyanite in the Rhenish basalts, 248.
—— crystalline form of dibenzyl and of stilbene, 383.
—— two calcio-sodic felspars from the Ural, 249.
—— the chemical composition of humite, 142.
—— outcasts of leucite from Vesuvius, 146.
—— the crystalline system of leucite, 1007.
—— on a meteorite which fell at Ibbenbühren in Westphalia, 255.
—— mineralogical notices: tridymite, quartz, nephelin, 250.
Rathke, B., action of carbon sulphochloride and perchlorinated methylmercaptan on aniline, 263.
—— perchlorinated methyl-mercaptan, 262.
Raynaud, J., resistance of galvanometers, 839.
—— conditions of maximum magnetic effect in galvanometers and electromagnets, 839.
Reboul, E., on various propylene chlorides, 1015.
Recknagel, G., physical properties of carbonic acid, 590.
Regnault, B., combinations of phosphorus with zinc and cadmium, 728.
Reichardt, E., apparatus for the determination of gases in liquids, 412.
—— antique bronze, 1201.
—— mineral springs of Java, containing iodine, 741.
—— mineral waters containing iron, 741.
—— neutral calcium phosphate, 353.
—— separation of phosphoric from molybdic acid, 1260.
—— separation of uranium oxide from phosphoric acid, 1260.
—— what constitutes pure water, 1065.
Reiman, M., granade, a new dye-stuff, 207.
Renard and Houzeau. See Houzeau.
Renault, M., application of the reduction of silver salts to the reproduction of designs, 537.
van Renesse, J. J., composition of the volatile oil of *Pastinaca sativa*, 642.
Rennard, E., the active principle contained in the aqueous extract of cantharides, 511.
Retschy and Hübner. See Hübner.
Reusch, E., appearances produced in calcspar by pressure, 257.
—— theory of twin-crystals, 257.
Reynolds, J. E., superphosphates, their adulterations and valuation, 530.
Reynolds, O., condensation of a mixture of air and steam on cold surfaces, 1001.
Rhien, F., preparation of potassium ferricyanide, 282, 380.
Riban, J., terebene, 1137.
Rice, C., preparation of iodides and bromides, 1104.
—— oleate of mercury and morphine, 510.
Rich, S. W., cheap saline disinfectants, 308.
v. Richter, V., isomeric series of benzene derivatives, 1224.
—— action of sodium formate on benzoic acid, 1238.
Riese, F., action of sodium on crystalline dibromobenzene, 62.
—— β-dibromobenzene, 63.
Rinmann, Dr., dyeing of feathers, 1069.
Rinne, A., a compound of allyl cyanide and ethyl alcohol, 879.
Risler and Schützenberger. See Schützenberger.
Roberts, W. C., and C. R. A. Wright, condition of the hydrogen occluded by palladium, as indicated by the specific heat of the charged metal, 112.
Rochard and Legros, vegetable parasites in bread, 86.
Roche and Bajault. See Bajault.
Roderburg, oxycymene and thiocymene, 1030.
Rœmer, H., derivatives of normal propyl alcohol, 1118.
Roessler, C., some new compounds of indium, 846.
Rollmann, W., the specific gravity of cork, 958.
Rommier, A., the dinitroderivatives of the higher homologues of benzene, 887.
Rose, G., behaviour of the diamond and graphite at high temperatures, 1195.

Rosenstiehl, A., nitrotoluene, 272.
Ross, W. A., pyrology or fire-analysis, 537.
Rossi and Lieben. See Lieben.
Rossler, H., gold-assays, 295.
Roster, G., a new kind of calculus from oxen; magnesium lithurate, 398.
Rother, R., lactophosphates, 494.
—— starch and albumin, 919.
Routledge, R., composition of ammonium amalgam, 135.
Roux, E., influence of tea and coffee on the amount of urea excreted, 1152.
Roux and Sarraux, effects of dynamite, 1068.
Rudnew, sulphocinnamic acid, 505.
Rüdorff, F., melting and solidifying points of fats, 237.
—— solubility of saline mixtures, 1101, 1102.
Rumney, R., obituary notice of, 780.
Ruschhaupt, F., making corks air-tight and indestructible, 308.

S.

Sacc, M., analysis of *Agaricus fœtens*, 650.
Sachsse, R., estimation of asparagin, 652.
Sadebeck, A., fahl-ore and its twin formations, 857.
Sagumenny, A., deoxybenzoïn, 502.
—— dinitrobenzile, 502.
St. Claire Glay, H., separation and detection of strychnine in chemico-legal investigations, 194.
de St. Martin, L., researches on santonin, 162.
Saint-Pierre and Estor. See Estor.
Sale, Lieut., action of light on the electrical resistance of selenium, 998.
Salessky, D., production of tertiary butyl chloride from isobutylene, 43, 368.
Salisbury, Marquis of, spectral lines of low temperature, 711.
Salkowski, E., decomposition of the nitro-anisols by ammonia, and constitution of tri-amidobenzene, 280.
—— Lex's test for phenol with ammonia and bleaching powder, 534.
Salkowski, H., direct formation of aromatic amidoderivatives, 638.
—— note on the above, 1134.
—— taurocarbamic acid, 1129.
Salomon, F., carbon oxysulphide, 350.
—— sulphocarbonic ethers, 617.
—— sulphuretted chlorocarbonic ethers, 1222.
Samson-Jordan, on the conditions necessary to the manufacture of iron highly impregnated with silicon in blast-furnaces, 1067.
Sandberger, A., buchonite, a rock belonging to the Nephelinite group, 608.
—— remarks on the minerals enclosed in volcanic rocks, 739.
Sanson, A., determination of the mechanical coefficient of aliments, 1249.
Sarandinaki, M., citric acid and its derivatives, 496.
Sarraux and Roux. See Roux.
Sauer, A., a generally applicable method of determining sulphur, 939.
Schack, discrimination of pressed and distilled oil of lemons, 1059.
Schaer, E., remarks on Fudakowsky's paper "on active oxygen," 839.
Scheerer, T., preparation of bar-iron from pig-iron containing phosphorus, 98.
Scheibler, C., presence of arabic acid in the sugar-beet, and in arabin-sugar, 1124.
—— action of an alkaline copper solution on cane-sugar and on mixtures of cane and grape sugar, 193.
—— use of the compound of dextro-glucose and sodium chloride for the preparation of Fehling's solution, 265.
—— phosphotungstic acids, 246.
—— quercite-sulphonic acid and a sugar derived therefrom, 166.
—— estimation of the yield of pure sugar from various sorts of raw beet-sugar, 296.
Schenk, R., triferrous phosphide, 826.
Schering, E., testing of potassium iodide for iodate, 191.
Scheurer-Kestner, A., causes of the loss of sodium in the manufacture of soda by Leblanc's process, 196.
Schiff, H., preparation of nitrous acid, 37.
—— sulphuretted tannic acid from phloroglucin, 506.
Schifferdecker, Mitscherlich's test for phosphorus, 407.
Schifferdecker and Michaelis. See Michaelis.
Schimpf and Köhler. See Köhler.
Schinnerer, L., analysis of copper glance from Catamarca, 851.
Schlagdenhauffen, action of sodium sulphide on glycerin, 868.
Schlefinger, A., testing of shoddy, 1168.
Schloesing, Th., nitrates in soils, 1198.
Schlumberger, E., process for precipitating potash in the form of alum from colours intended for roller-printing, 950.

Schmidt, A., amidazobenzene, 64.
Schmidt, Al., new researches on the coagulation of fibrin, 180.
Schmidt, C., eatable earths of Lapland and Southern Persia, 151.
Schmidt, E., nitroanthracene and its derivatives, 1233.
—— a new hydrocarbon isomeric with anthracene, 176.
Schmidt, G. A., compound of azobenzene with benzene, 499.
Schmitt, action of aqueous chloride of lime on an aqueous solution of orthoamidophenol hydrochloride, 280.
Schneider, F. C., analyses of the mineral waters of Mehadia in Hungary, 359.
Schneider and Hübner. See Hübner.
Schneider, R., new sulpho-salts, 1197.
Schober, J. B., valuation of animal charcoal, 1060.
Scholz, R., synaphy (cohesion) of some substances hitherto uninvestigated, especially of the compound ethers, 588.
Schorlemmer, C., the heptanes from petroleum, 319.
—— oenanthylic acid, 617.
Schorlemmer and Dale. See Dale.
Schorlemmer and Grimshaw. See Grimshaw.
Schrauf, A., arragonite from Sasbach, 857.
—— rittingerite, 852.
Schreder, J., oxidation-products of colophony, 889.
Schrötter, A., working of the tellurium ore of Nagyag in Transylvania, 1003.
v. Schrötter, R., behaviour of iodine and sulphur towards mercury, 476.
—— preparation of tellurium, 475.
Schüszleder, J., production of diamond hardness in graving tools and steel wire, 418.
Schützenberger, P., action of iodine on some aromatic hydrocarbons, 498.
—— an isomeride of anthraquinone, 388.
—— brominated ether, 487.
Schützenberger, P., and Gérardin, new process for estimating free oxygen, 88.
Schützenberger, P., and E. Quinquaud, respiration of aquatic plants, 1252.
Schützenberger, P., and C. Risler, researches on the oxidising power of blood, 643.
—— —— action of oxygen dissolved in water on reducing agents, 840.
Schützenberger, P., and C. Risler, volumetric determination of free oxygen, 936.
Schulatschenko, A. R., basic calcium carbonate in hydraulic cements, 97.
Schulhe, W., defuselation by wood charcoal, 308.
Schultz, G., diphenyl-benzene, 888.
Schultzen, O., estimation of uric acid by Bunsen's process, 535.
Schulze, C. F., the constituents of cubebs, and some remarks on cubebic acid, 1148.
Schulze, E., the constitution of suint, 513, 518, 1219.
—— composition of wool fat, 920.
Schulze, F., estimation of nitric acid, 529.
—— transpiration of saline solutions, 468.
Schumann, C., estimation of phosphoric acid, 940.
Schunck, E., methyl-alizarin and ethyl-alizarin, 900.
Schuster, A., the spectrum of nitrogen, 340.
Schwarz, H., aluminium gold-purple, 205.
—— preparation of pure dextroglucose, 265.
—— preparation of crystallised grape-sugar, 370.
—— decolorising action of animal charcoal, 302.
—— dynamite, 304.
—— composition of various kinds of glass, 201.
Seegen, J., and J. Nowak, determination of nitrogen in albuminoïds, 1063.
Seelhorst, G., phosphorescent substances, 949.
Seger, H., the colours of bricks, 951.
Sekulic, M., direct visibility of the ultra-violet rays, 125.
Sell, E., mustard-oils, isosulphocyanic ethers, or sulphocarbimides, 881.
Sellmeier, E., vibrations produced in the particles of bodies by the vibrations of the ether, 242.
Selmi, F., improvements in toxicological investigations: 1. Detection of arsenic.—2. Detection of any metals in organic mixtures.—3. Detection of phosphorus.—4. Detection of blood by formation of hæmin crystals. 5. Alkaloïd existing in alcohol.—6. Characteristics of picrotoxin and colocynth, 1165.
Sels, white paint for metallic surfaces, 205.
Senfter, R., diabase, 736.
Sesemann, L., tetramethyl-aniline from coal-tar, 912.

Sestini, F., and S. Cannizzaro. See Cannizzaro.
Sestini, F., and G. del Torre, experiments on the cultivation of the sugar-beet in the Campagna Romana, 1254.
Shdanow, action of monobromacetyl bromide on zinc-methyl, 48.
Shepard, C. U., meteoric iron lately found in El Dorado Co., California, 255.
Siebürger, F., permanent paint for fire-proofing wood, 307.
—— preparation of a good adhesive and durable paste, 306.
Siemens, C. W., smelting of iron and steel, 661.
Siemens, R., action of phosphorus pentachloride on sulphacetic acid, 1022.
—— silvering of glass, 419.
Silva, A., isopropylic ethers, 367.
Silva and Friedel. See Friedel.
Silvestri, O., the sulphuretted springs known as those of S. Venera al Pozzo, at the eastern base of Etna, 863.
Sinclair's apparatus for the conversion of wood into paper-pulp by chemical means, 308.
Sintenis and Zincke. See Zincke.
Skey, W., the alkalinity or acidity of certain salts and minerals as indicated by their reaction to test-paper, 1159.
—— isolation of the bitter substance of the nut of the karaka tree, 933.
—— preparation of potassium sulphocyanate, 879.
—— preparation of sulphuretted hydrogen, 840.
Smith, H. A., amount of arsenic in pyrites, and its distribution in acid and alkali manufacture, 417.
—— the chemistry of sulphuric acid manufacture, 538.
Smith, J. L., conversion of alkaline sulphates into carbonates, tartrates, &c., in the moist way, 1003.
—— the Corundum of N. Carolina, Georgia, and Montana, and the minerals accompanying it, 1204.
—— on a mass of meteoric iron from Cape Colony, 610.
—— preparation of platinum black, 141.
Souchay, A., solubility of silica in aqueous ammonia, 473.
Soxhlet, F., contributions to the physiological chemistry of milk, 187.
Soxhlet and Petersen. See Petersen.
Spiller, J., new sources of methyl- and ethyl-aniline, 759.
Spirgatis, H., identity of the so-called "unripe amber" with krantzite, 483.
Sprengel, H., air-bath of constant temperature between 100° and 200° C., 458.
—— a new class of explosives which are non-explosive during their manufacture and transport, 796.
—— a method of determining the specific gravity of liquids with ease and great exactness, 577.
Springmühl, F., use of aniline colours dissolved in collodion, 206.
—— anthracene blue, 308, 422.
—— the poison-contents of aniline colours, 207.
Squibb, E. J., chloral, 284.
Squibb, R., litmus-paper, 196.
Staedel, W., decomposition of ketones by heat, 754.
—— formation and decomposition of ketones, 753.
Stahlschmidt, C., composition of the liquors obtained by the oxidation and lixiviation of "soda-waste" in the recovery of sulphur therefrom, 197.
Stamm, A., estimation of aniline colouring matters by means of sodium hyposulphite, 1263.
Stammer, R., determination of the matter absorbed by animal charcoal in the refining of sugar, 1061.
Stanford, E. C., action of charcoal on organic nitrogen, 14.
—— Iona pebbles, 19.
Staples, B. S., obituary notice of, 782.
Stearn, C. H., and G. H. Lee, the effect of pressure on the character of the spectra of gases, 996.
Stein, W., molecular colours of the metals, 342.
Steinberg, J., determination of the absolute mass of the blood, 646.
Stenhouse, J., amido-derivatives of orcin, 752.
—— iodo-derivatives of the orcins, 275.
Stingl, J., graphite, 849.
—— softening of water by boiling with lime, 415.
Stockhardt, on Christiani's field experiments, at Oderbruch, 87.
Stohmann, proportion of phosphoric acid to nitrogen in milk, 518.
Stokvis, B. J., the bile-pigments and their detection by the spectroscope, 78.
—— oxidation-products of bile-pigment, 288.
Stolba, F., preparation of pure sodium silicofluoride, and its use in volumetric analysis, 406.
Strakosch, J., new members of the stilbene group, 890.
Struve, H., experiments in the domain of forensic chemistry. 1. Detection of prussic acid, 1168.

Subic, S., on temperature constants, 241.
Suter-Neef, H., koumiss, 76.

T.

Tawildarow, A., acediamine, 59.
—— action of aldehyde on acetamide, 58.
—— methyl-guanidine, 75.
Teclu, N., oligoclase from Wilmington, Delaware, 149.
Tellier, C., determination of the true zero of thermometers, 129.
Terne, B., a productive source of ammoniacal salts, 1170.
Terreil, A., action of sulphuric acid on cellulose, 370.
Tessié du Mothay, method of preparing pure chlorine and hypochlorites, 96.
—— preparation of potash, soda, and baryta from the corresponding sulphides, 414.
—— recovery of potash, soda, &c., from soap-water, 415.
—— purification and decoloration of beet-juice, 424.
Tessier, ferric chloride as a test for iodine, 527.
Theegarten, A., dichloracetone, 1223.
Thénard, P. and A., influence of electricity on mixtures of marsh-gas and carbon dioxide, 864.
—— new researches on the silent electric discharge, 1093.
Thomas, Th., obituary notice of, 782.
Thomsen, J., affinity of oxygen for chlorine, bromine, and iodine, 1188.
—— the common constant of affinity, 1192.
—— affinity of hydrogen for the non-metallic elements, 126.
—— basicity and constitution of periodic acid, 595.
—— on Berthelot's researches on hydrochloric acid, 1096.
—— formation of sulphur-acids, 717.
—— researches on some oxidising and reducing agents, 1186.
—— thermochemical researches on the solution of various solid, liquid, and aëriform substances in water, 1101.
—— thermochemical determinations of the affinity of oxygen for sulphur, selenium, and tellurium, 1190.
—— thermochemical investigations. XI. Affinity of H. for Cl., Br., I., O., N., and C., 838.
Thorpe, T. E., an improved form of filter-pump, 132.
—— estimation of nitric, chloric, and iodic acids, 541.
Thorpe and Young, combined action of heat and pressure on the paraffins, 260.
Thumb and Eisfeldt. See Eisfeldt.
Tichborne, C. R. C., action of heat on solutions of hydrated salts, 34.
Tidy, C. M., and W. B. Woodman, ammonia in the urine in health and in disease, 516.
Tiemann, examination of the methods of water-analysis, 945.
Tollens, B., detection of sulphur by the blowpipe, 1160.
—— preparation of parabanic acid, 283.
Tollens, B., and O. Philippi. See Philippi.
Tollens, B., and R. Wagner. See Wagner.
Tomlinson, C., supersaturated saline solutions, 720.
Tommasi, D., action of chloracetyl chloride on aniline and toluidine, 911, 1040.
—— chloracetyl-urea, 758, 880.
—— the acid derivatives of naphthylamine, 1041.
Tommasi, D., and H. David, acetyl picrate, 1238.
Tommasi, D., and G. Quesneville, action of zinc on acetyl chloride, 614.
Topsoë, H., and C. Christiansen, crystallographico-optical investigations, with special reference to isomorphous bodies, 994.
del Torre and Sestini. See Sestini.
Trécul, A., confirmation of some of the chemical phenomena observed by Pasteur, 84.
—— fermentation, 294.
Treutler, C., means of facilitating the distribution of potash in the soil, 1052.
Tribe and Gladstone. See Gladstone.
Tromenec, M. de, a method of comparing different kinds of gunpowder, 1260.
Troost, L., some reactions of the chlorides of boron and silicon, 351.
Troost, L., and P. Hautefeuille, allotropic modifications of phosphorus, 599.
—— —— derivatives of silicium oxychloride, 746.
—— —— solution of gases in iron, cast-iron, and steel, 729.
Tschermak, G., analysis of andesite from Czibles, on the Gutin range of North Transylvania, 1211.
—— mica spherules from Hermannschlag in Moravia, 1009.

Tschirvinsky, derivatives of monoxyazobenze, 1027.
Tunner, P., direct preparation of iron from its ores, 953, 1171.

U.

Ulex, G. L., estimation of alcohol in fusel oil, 1164.
Unger, C., ultramarine, 140.
Untchj, G., the basalts of styria, 1115.
Urbain and Mathieu. See Mathieu.
Urech, F., cyanogen-derivatives of acetone, 59.
—— lacturamic acid and lactyl urea, 380.
Urech and Wislicenus. See Wislicenus.

V.

Valson, C. A., modular properties of refractive powers in saline solutions, 460.
Verni and Bourgoin, presence of an organic alkali in Boldo, 179.
Versmann, F., improved process for preparing anthracene, 956.
Vicaire, E., on the theory of sun-spots and the dark nucleus of the sun, 838.
Vidal, L., polychromic photography, 1267.
Vincent, C., new mode of formation of methylamine, 498.
Violette, C., raw sugar of the third produce, and commercial analysis of the same, 957.
—— compound of sugar with potassium chloride, 611.
Violette, H., fusion of platinum in a small wind-furnace, 477.
Vivien's process for estimating the alkalinity of juice in the sugar-factory, 1060.
Voelcker, A., analysis of agricultural materials, 766.
—— pure and mixed linseed cake, 767.
Voelker, H., analysis of syngenite, a new mineral from Kalusz, in Gallicia, 254.
—— analysis of a furnace-product containing magnetic iron oxide, 254.
Vogel, A., reaction of milk with litmus, 1048.
Vogel, C., absorption of the chemically active rays in the sun's atmosphere, 712.
—— the light emitted by leaves, 647.
Vogel, H., arsenic in green-tinted envelopes, 943.
—— sensibility of haloïd silver-salts to light under alkaline development, 948.
—— "Schot-brod," 424.
Vogel, spontaneous disintegration of lead and bismuth alloys, 603.
Vogel and Dragendorff, presence of bile-acids in normal urine, 928.
Vohl, H., zinc beer-coolers, 958.
Voit, C., use of gelatin in nutrition, 284.
Voit and Bauer, amount of metamorphosis of albumin after blood-letting, 288.
Voit and Pettenkofer. See Pettenkofer.
Volhard, J., glycolyl sulphur-urea, 880.
Volpicelli, P., on the electric balance and an electrostatic phenomenon, 839.
Vrbal, analysis of syngenite from Kalusz, and identity of kaluszite with syngenite, 852.

W.

Wackenroder, B., apparatus for the quantitative estimation of carbonic anhydride, 1053.
Wagner, H., use of water-glass in building, 540.
Wagner, R., and B. Tollens, allyl cyanocarbonate, 381.
—— —— diallyl, and attempts to prepare allyl-benzene, 1122.
—— —— monobromacrylic acid from β-dibromopropionic acid, 1220.
—— —— a hydrate of parabanic acid, 759.
Wallach, O., action of potassium cyanide on chloral; new method of preparing dichloracetic acid, 627.
v. Waltenhofen, A., new form of Noë's thermoelectric battery, 465.
Walz, J., action of chromium trioxide on iodine, 141.
—— cleansing of laboratory vessels, 1276.
Wanklyn, J. A., fractional distillation, 345.
—— note on the Nessler test, 1055.
—— porous filters, 952.
Wanstrat, R., derivatives of salicylic acid. 906.
—— thiamides, 909.
Warington, R., decomposition of tricalcic phosphate by water, 983.

Warner, G. J., reduction of sulphuric acid by hydrogen, 1002.
Wartha, V., convenient gas-generators, 132.
Watts, W. M., spectrum of the Bessemer flame, 461.
Weber, F., condensation of gases on the surface of solid bodies, 468.
Weber, H., heat-conducting power of iron and German silver, 349.
Websky, H., julianite, 149.
Websky, M., use of acid potassic sulphate as a flux for sulphides and analogous compounds, 89.
Weddige, A., cyanocarbonic ether, 380.
—— action of potassium sulphydrate on aromatic nitriles, 1241.
Weidel, H., nicotine, 508.
Weisbach, A., copper arsenide, 851.
—— uranium minerals, 1108.
—— zeunerite, 150.
v. Weise, K., manufacture of white lead, 1268.
Weiss, A., quartz-crystals from the Wallis, 857.
—— occurrence of zeolites in the basalt of the Limperichkopf at Asbach, 1116.
Weiss and Hübner. See Hübner.
Weisskopf, P., production of opacity in glass, 657.
Weith, W., action of alcoholates and phenates on amides, 1240.
—— cyanonaphthalene, 1241.
—— mutual convertibility of aromatic mustard oils (sulphocarbimides) and cyanides, 908.
—— preparation of aromatic sulphoureas, 1241.
—— synthesis of aromatic acid, 901.
Weith and Merz. See Merz.
Weldon, W., treatment of dilute chlorine, 949.
Wemmer, F., working of titaniferous iron ores, 540.
Weppen, H., salts of jervic acid, 906.
—— some constituents of white hellebore root, 905.
Werigo, A., capability of azobenzene to form addition-products, 383.
Werigo and Okulitsch, decomposition-products of the chloranhydride of glyceric acid, 1020.
Weselsky, P., alorcinic acid, a new acid from aloes, 1039.
—— iodine substitution-products, 761.
van der Weyder, new method of testing the inflammability of petroleum and other hydrocarbons, 532.
Weyrich, R., different methods employed for the quantitative estimation of caffeine, 1264.
Wibel, F., composition and formation of azurite, 1110.
—— South African fibrous quartz a pseudomorph of crocidolite, 739, 1209.
—— pseudomorphs of gypsum and glass, 740.
—— gold from Vancouver Island and from West Africa, 1108.
—— lime uranite in the phosphorite of Carceres, Spain, 1110.
—— analysis of some waters of the island of Cephalonia, 741.
Wibel, F., and A. Zacharias, new genus of plants which precipitate calcium carbonate, 765.
Wichelhaus, H., phenoquinone and similar compounds, 172.
Widmann, M. O., ammoniacal salts of silver, 1106.
Wiedemann, E., indices of refraction of the sulphuretted substitution-products of the carbonic ethers, 620.
Wildt, composition of the bones of rabbits of various ages, 290.
Williams, C. Gr., production of furfurol by the action of superheated water on wood, 162.
Williams and Hübner. See Hübner.
Wilson, J. C., obituary notice of, 783.
Wimmer, F., the copper-process of Hunt and Douglas, 952.
Winckler, Cl., lithiophorite, 149.
—— new minerals containing uranium, 606.
Wislicenus, J., acrylic acid, 493.
—— observations on the so-called anhydrides of lactic acid, 57.
—— hydracrylic acid, 490.
Wislicenus, J., and F. Urech, ethylmalonic acid, 376.
Witt, O., preparation of nitriles, 879.
Wittich, the liver ferment, 515.
—— the peptic action of the pyloric glands, 515.
Wittstein, G. C., analysis of galena, 652.
—— water from the springs of Partenkirchen, 486.
Woelz, A., brominated benzenesulphonic acids, 1142.
Wolf, W., a lecture experiment in vegetable physiology, 522.
Wolff, E., assimilation by sheep of various ages, 519.
Wolff, F. A., application of the water air-pump to evaporation, distillation, filtration, &c., *in vacuo*, 132.
Wolffhügel, G., pepsin and the digestion of fibrin, 761.
Wolkow, Anna, isocrotyl ether, 747.

Wreden, F., camphoric acid, 72, 505.
—— optically inactive camphoric acid, 1038.
Wright, C. R. A., action of hydrochloric acid on codeine, 916.
—— isomeric terpenes and their derivatives, 549.
—— isomeric terpenes and their derivatives, Part II; on cymenes from various sources, 686.
—— action of sulphuric acid on morphine, 220.
Wright, J. J., manufacture of alkalis, 414.
Wright and Mayer. See Mayer.
Wright and Roberts. See Roberts.
Wüllner, A., spectra of gases in Geissler's tubes, 242.
Wurster and Meyer. See Meyer.
Wurtz, A., new researches on aldol, 876.
—— the vapour-density of phosphorus pentachloride, 726.

Y.

Young, J., improvements in the methods of obtaining hydrocarbons, 956.
Young and Thorpe. See Thorpe.
Yvon, P., crystalline mercurous iodide, 1105.
—— estimation of urea, 411.

Z.

Zalessky. See Salessky.
Zay, W., preservation of albumin for photographic purposes, 423.
Ziegler and Nencki. See Nencki.
Zincke, Th., action of benzyl chloride on aromatic hydrocarbons, 272.
—— new series of aromatic hydrocarbons, 631.
—— action of zinc on a mixture of aromatic halogen-compounds and aromatic hydrocarbons, 632.
Zincke, Th., and Plascuda. See Plascuda.
Zincke, Th., and F. Sintenis, dinitrobromobenzene and phenylene-diamine, 167.
—— —— Griess's phenylene-diamine and dibromobenzene, 640.
Zinin, N., oxylepidene, 489.
Zitowitsch and Kolbe. See Kolbe.
Zulkowsky, K., effect of caoutchouc tubes on the illuminating power of coal-gas, 300.

INDEX OF SUBJECTS.

A.

Aarite, or Arite, 479.
Absorption-spectra of anthrapurpurin, 433.
Acediamine, 59.
Acenaphthene, action of heated lead oxide on, 1135.
Acenaphthene and naphthalic acid, 632.
Acetaldehyde, action of hydrochloric acid on, 58.
Acetamide, action of aldehyde on, 58.
—— behaviour of, when heated with sodium-alcohol, 991.
Acetamides, chlorinated, 1129.
Acetanilide, products obtained by distilling, with sodium phenate, 1240.
Acetate of erbium, 139.
Acetate of lead, products of the dry distillation of, with lead sulphocyanate, 363.
Acetate of potassium, heat developed during the formation of, 1100.
Acetate of yttrium, 138.
Acetate and cinnamate of calcium, products of the dry distillation of, 901.
Acetates, action of, on lead salts, 575.
—— dissociation of, 33.
Acetenyl-benzene, action of sodium and carbonic anhydride on, 636.
Acetic acid in crude fermentation-butyric acid, 375.
—— —— estimation of, in wine, 92.
—— —— increase of, in alcoholic fermentation under reduced pressure, 982.
—— —— manufacture of, 957.
—— —— preparation of, 613.
Acetic acid, glacial, action of chloral on, 878.
Acetic acid and alcohol normally present in milk, as products of the functions of microzymes, 763.
Acetic acid and water, freezing points of mixtures of, 613.
Acetic anhydride, action of, on ammonium sulphocyanate, 1224.
—— —— action of, on anthrapurpurin, 428.
Acetic chloride. See Acetyl Chloride.
Acetochlorhydrose, action of fuming nitric acid on, 612.
Acetochloride of methylene, 1117.
Acetocinnamone, 901.
Acetone, derivatives of, 496.
—— chlorinated derivatives of, 159, 379.
—— cyanogen-derivatives of, 59.
—— formation of, from glycerin, 627.
Acetonitril and chloral, 626.
Acetonitrils, chlorinated, 1128.
Acetonyl-urea, 61.
Acetonyluramic acid, 62.
Acetophenone, action of ammonia on, in presence of phosphorus pentoxide, 1036.
Acetophenonine, 1036.
Acetyl chloride, action of, on epicarbhydric acid, 1217.
—— —— action of, on hydrobenzoïn and isohydrobenzoïn, 1139.
—— —— on nitrates and nitrites, 683.
—— —— action of zinc on, 614.
Acetyl picrate, 1238.
Acetyl-carberin, 371.
Acetyl-diphenylamine, 74.
Acetylene, affinity of carbon and hydrogen in, 127.
Acetylide, 614.
Achrodextrin, 394.
Acidity or alkalinity of certain salts and minerals, as indicated by their reaction with test-paper, 1159.
Acids, division of the same base between two, 36.
—— free, in wine, 659, 957.
—— influence of, on iron and steel, 848.
—— standardising of, 123.
Acids aromatic, action of the chlorides of, on aromatic hydrocarbons, 1233.
—— —— synthesis of, 635, 901.
Acids, monobasic, hydrates of, 371, 838.
Acids, organic, new series of, 72.
Acids, organic, and pyrocatechin, simultaneous formation of, from grape-sugar, 1050.
Acids, vegetable, formation of, in leaves in the autumn, 1049.
Aconic acid, 875.
Aconitine, solubility of, in chloroform, 535.

Acrylic acid, 493.
Acrylic acid, monobrominated, from β-dibromopropionic acid, 1220.
Actino-chemistry, researches in, 232.
Adipic acid, 622.
Adulteration of pepper, 1173.
Affinity, common constant of, 1192.
Affinity of oxygen for chlorine, bromine, and iodine, 1188.
Affinity in solutions of ferric chloride, 847.
Affinity of oxygen for sulphur, selenium and tellurium, thermochemical determinations of the, 1190.
Agaricus fœtens, analysis of, 650.
Agricultural materials, analysis of, 766.
Air, amount of carbon dioxide in, 595.
Air, compressibility of, at high temperatures, 239.
Air of rooms, arsenic in, 421.
Air of the soil of Munich, amount of carbon dioxide in, 361.
Air and steam, condensation of a mixture of, upon cold surfaces, 1001.
Air-bath of constant temperature between 100° and 200° C., 458.
Air-battery, 582.
Air-pump, water, 131, 591.
Alacreatine, 1024.
Alan-gilan, the essence of the flowers of *Unona odoratissima*, 1149.
Alanine, combination of, with cyanamide, 1024.
Albumin, amount of metamorphosis of, after blood-letting, 288.
—— influence of starch on the solubility of, 919.
—— the part played by gases in the coagulation of, 1247.
—— preservation of, for photographic purposes, 423.
Albumin, circulating, 285.
Albumin, iodised, 512.
Albumin, organ-, 285.
Albuminate, relation of alkaline phosphates to, 187.
Albuminate and casein, question as to the identity of, 188.
Albuminoïds, decomposition of, by baryta, 514.
—— determination of nitrogen in, 1063.
—— researches on the, 760.
Alcohol, action of ozone on, 864.
—— detection of alkaloïds in, 1167.
—— detection of, in fusel oil, 1164.
—— detection of, in volatile oils, 532.
—— chemico-legal detection of, 92.
—— estimation of, in commercial chloroform, 533, 1059.
Alcohol, influence of, on animal heat, 518.
—— new method of testing for fusel oil, 532.
Alcohol, a new tertiary, and a method of preparing a series of tertiary alcohols, 488.
Alcohol, amylic, conversion of amylene into, by sulphuric acid, 369.
Alcohol, amylic, secondary, 45.
Alcohol, benzylic, occurrence of, in liquid storax, 65.
Alcohol ethylic, compound of, with allyl cyanide, 879.
Alcohol, methylic, production of, by distillation of dry calcium formate, 1118.
Alcohol, normal propylic, derivatives of, 1118.
Alcohol, physiological, in human urine, 399.
Alcohol and acetic acid normally present in milk as products of the functions of microzymes, 763.
Alcohol and water, detection of, in ether, 532.
Alcoholates and phenates, action of, on amides, 1240.
Alcoholic fermentation. See Fermentation.
Alcohols, action of carbon sulphide on, 497.
Alcohols, compounds of, with aromatic hydrocarbons, 885.
Alcohols derived from ethyl-amyl, 313.
Alcohols of fermentation, on several groups of isomeric bodies derived from the, 258.
Alcohols, normal, table of, 1082.
Alcohols, polyatomic, action of oxalic acid on, 1219.
Aldehyde, action of, on acetamide, 58.
Aldehyde, diphthalic, 392.
Aldehyde, isobutylic, polymeric modification of, 378.
Aldehyde, valeric, density, boiling point and rotatory power of, 1017.
Aldehydes, action of carbon sulphide on, 497.
—— compounds of, with aromatic hydrocarbons, 884.
—— compounds of, with phenols and with aromatic hydrocarbons, 501.
—— condensation-products of, 58.
Aldol, new researches on, 876.
Aleurites triloba, fruit of (candle-nuts), 86.
Aliments, determination of the mechanical co-efficient of, 1249.
Alkaline solutions, constitution of, 1098.
Alkaline sulphides, changes which they undergo on dilution, 861.

Alkalinity or acidity of certain salts and minerals, as indicated by their reaction with test-paper, 1159.
Alkalinity of juice in the sugar factory, processes for estimating, 1060.
Alkalis, manufacture of, 414.
—— reaction of tannic acid, with, 95.
Alkalis and alkaline earths, heat evolved in the action of water on, 1096.
Alkaloïd in Boldo, 179.
Alkaloïds, detection of, in alcohol, 1167.
—— hydrocyanides of, 497.
—— oxidation-products of, 1041.
—— reactions of various, with chloroform, 535.
—— removal of nitrogen from, 1041.
Alkaloïds of cinchona bark, 914.
Alkaloïds of cinchona bark, distribution of, 931.
Alkaloïds of cinchona bark, optical properties of some modifications of the, 1117.
Alkaloïds of *Hydrastis Canadensis*, or Golden Seal, 919.
Alkaloïds of *Isopyrum thalictroïdes*, 511.
Allantoïn, oxidation of, with potassium ferricyanide, 1025.
Allantoxanic acid, 1025.
Allophanate, propylic, 872.
Alloys employed for gold coinage, 1067.
Alloys of lead and bismuth, spontaneous disintegration of, 603.
Allyl compounds, constitution of, 1017.
Allyl chloride, action of hypochlorous acid on, 1123.
Allyl cyanide, compound of, with ethyl alcohol, 879.
Allyl cyanocarbonate, 381.
Allyl-benzene, attempts to obtain, 1122.
Allylene produced by electrolysis of itaconic acid and its isomerides, 378.
Allylene dichloride, formation of, by dehydration of dichlorhydrin, 1218.
Allylene dichlorodibromide, 1218.
Allylene tetrachloride, 1218.
Aloes, new acid from, 1039.
Aloïn, formation of, in *Aloë socotrina* when exposed to the air, 84.
Alorcinic acid, 1039.
Alpha-dinitrotoluene, 274.
Alpha-nitrotoluene, 274.
Alum, behaviour of, towards the chromates of potassium and barium, 1005.
Alum containing chromic acid, reasons why it cannot be formed, 1005.
Alum, mordanting of woollens with, 206.
Alumina-soap as a lake, 960.
Aluminate of sodium, use of, in calico printing, 1271.
Aluminite, occurrence of, near Halle, 853.
Aluminium, action of, on zinc chloride, 848.
Aluminium gold-purple, 235.
Aluminium-propyl, 366.
Aluminium sulphate, testing of, 1162.
Alums, crystalline dissociation of, 32.
Amalgam of silver, native, 356.
Amber, identity of so-called "unripe," with krantzite, 483.
Amblygonite and Montebrasite, crystalline forms and optical properties of, 481.
Amidacetonaphthalide hydrochloride, 1232.
Amidanthraquinone, 389.
Amidazobenzene, 64.
Amides, action of carbon sulphide on, 497.
—— action of phenates and alcoholates on, 1240.
Amido-acids, aromatic, containing alcohol-radicals, 281, 1145.
Amidobenzene, 1146.
Amido-derivatives, aromatic, direct formation of, 638.
Amido-diimido-orcin, 752.
Amidomonochlorobenzene-sulphonic acid, 639.
Amidophenol-sulphonic acids, 903.
Amidostilbene, 891.
Amido-thiobenzamide, action of ammonia on, 909.
Amines, action of hydrochloric acid gas on, 910.
Amines, aromatic, 507.
Ammonia, action of gaseous, on nitrate of ammonia, 1201.
Ammonia in coal-gas, estimation of, 409.
Ammonia, improvements in the mode of estimating by the Nessler test, 1161.
Ammonia, properties of anhydrous liquefied, 473.
Ammonia, solubility of silica in aqueous, 473.
Ammonia, spectrum of, 340.
Ammonia, direct synthesis of, 1002.
Ammonia in the urine in health and in disease, 516.
Ammonia, unusual amount of, in a so-called Spa water, 256.
Ammonia nitrate, union of, with ammonia, 598.
Ammonia sulphate, production of, from nitrogenous waste, 1066.
Ammonia and sulphur, removal of, from coal gas by a continuous process, 1270.

Ammoniacal salts, dissociation of, 33.
—— —— a productive source of, 1170.
Ammonias, compound. See Amines.
Ammonio-ferrous sulphate, 246.
Ammonio-glucinic sulphate, 1004.
Ammonium amalgam, composition of, 135.
Ammonium hypophosphite, 4.
Ammonium molybdate, 354.
Ammonium sulphides, action of copper on, 1105.
Ammonium sulphocyanate, action of acetic anhydride on, 1224.
Amphoteric reaction of casein, 514.
Amphoteric reaction of milk, 188.
Amyl alcohol, action of the principal derivatives of, on polarised light, 1017.
Amyl alcohol, active and inactive, 1017.
Amyl alcohol, secondary, 45.
Amyl iodide, action of copper-zinc couple on, 678.
Amyl iodide and water or alcohol, action of copper-zinc couple on, 681.
Amylene, conversion of, into an amyl alcohol by sulphuric acid, 369.
Amylenes, 1013.
Amylphosphine, 882.
Amylphosphinic acid, 884.
Anacardium nuts, black dye obtained from, 205.
Analyses of gases, technical, 651.
Analysis, elementary organic, 1057.
Analysis of minerals, new method of proximate, 477.
Analysis, spectral, quantitative, 1258.
Analysis, spectral, peculiarities observed during researches on, 1257.
Andalusite, description of a crystal of, from Delaware Co., Pennsylvania, 257.
Andesin from the Ural, 249.
Anglesite, compact, from Arizona (U.S.), 1205.
Anhydrides of lactic acid, 57.
Anhydrovanadates of thallium, 324.
Anilide of quinone, 173.
Aniline, action of bromobenzene on, 73.
—— action of chloracetyl chloride on, 911.
Aniline black, 1069.
Aniline colours, dyeing of felt with, 1176.
Aniline colours, fixation of, by means of size containing tannic acid, 1276.
Aniline colours on cotton, cheap printing colour for, 308.
Aniline colours dissolved in collodion, use of, 207.
Aniline colours, poison-contents of, 207.
Aniline, crystalline form of ethylene-platinochloride of, 471.
Aniline-dyes, estimation of, by means of sodium hyposulphite, 1263.
Aniline-green, dyeing of straw with, 305.
—— —— dyeing of wool with, 959.
Aniline manufacture, oil-baths in the, 306.
Aniline-red, new, 1272.
Aniline, new red colouring matter from, 640.
Aniline-vapour, action of heated lead oxide on, 1135.
Aniline and phenol, action of chlorine on a mixture of, 1147.
Animal body, dehydration in the, 287.
Animal charcoal. See Charcoal, 99.
—— —— decolorising action of, 302.
—— —— determination of the matter absorbed by, in refining sugar, 1061.
—— —— revivification of, 303.
—— —— valuation of, 1060.
Animal fluids, reaction of, 188.
Animal heat, influence of alcohol on, 518.
Animals, consumption of water by, 929.
Anisbetaine, 1146.
Annealing of glass, 723.
Anniversary Meeting (March 31, 1873), 772.
Anorthite, crystallographic description of, 257.
—— twin-laws of, 857.
Anthracenamine, 641.
Anthracene, 750.
—— fluorescent relations of, 235.
—— improved process for preparing, 956.
—— isomerides of, 175, 176, 177.
—— new synthesis of, 500.
—— valuation of commercial, 1263.
Anthracene-blue, 308, 422.
Anthraflavic acid, 19, 275.
Anthrapurpurin, 425.
—— absorption-spectra of, 433.
—— as a dyeing agent, 433.
—— metallic derivatives of, 431.
—— reaction of, with acetic anhydride, 428.
—— reaction of, with ammonia, 432.
—— reaction of, with benzoyl chloride, 430.
—— reaction of, with bromine, 432.
—— reaction of, with nitric acid, 433.
Anthraquinone, nitro-derivatives of, 389.
Antifermentescible substances, 84.
Antimony, production of crystalline, 1007.
—— volumetric estimation of small quantities of, 407.
Antique bronze, analysis of an, 1201.

Anthraquinone, formation of, in the preparation of benzophenone, 171.
—— isomeride of, 388.
—— nitrogen-compounds of, 389.
Apatite, 101, 735.
Apatite, iodine and bromine in, 357.
Aphrosiderite, 1115.
Apnœa, the blood in, 1247.
Apomorphine, 917.
Apomorphine, blue colouring matter obtained from, by oxidation of, 1083.
Aquatic plants, respiration of, 1252.
Arabic acid, presence of, in the sugar-beet, 1124.
Arabin-sugar, 1124.
Aragonite from Sasbach, 857.
Ardennite, 854.
Arite or Aarite, 479.
Aromatic acids, action of the chlorides of, on aromatic hydrocarbons, 1233.
—— —— synthesis of, 901.
Aromatic amido-acids containing alcohol-radicals, 287, 1145.
—— amido-derivatives, direct formation of, 638.
Aromatic amines, 507.
Aromatic compounds containing silicium, 1026.
Aromatic hydrocarbons, compounds of, with aldehydes and alcohols, 884.
Aromatic hydrocarbons, action of benzyl chloride on, 272.
Aromatic ketones, synthesis of, 1035.
Aromatic nitrils, action of potassium sulphydrate on, 1241.
Aromatic phosphorus-compounds, 1148.
Aromatic sulphur-ureas, preparation of, 1241.
Arsenates and phosphates, mineral, 101.
Arsenetted hydrogen, 842.
Arsenic, action of sulphur on, 843.
Arsenic in the air of rooms, 421.
Arsenic, amount of, in pyrites, and its distribution in acid and alkali manufacture, 417.
Arsenic, detection of, 943, 1165.
—— detection of, in phosphoric acid, 940.
Arsenic, volumetric estimation of small quantities of, 407.
Arsenic-glance, 850.
Arsenical colours, detection of, on paper and paper-hangings, 1057.
Arsenical hydrofluoric acid, 528.
Arsenide of copper, 852.
Arseniferous uranium mica (zeunerite) from Joachimsthal, 1010.
Arseniosiderite, 102.
Arsenious acid, solubility of, in water, 1006.
Ash of the wood of differently manured vines, 1253.
Ashes from Vesuvius, composition of, 1011.
Asparagin, method of estimating, 652.
Aspartic acid produced by oxidation of conglutin with potassium permanganate, 628.
Aspergillus niger, influence of metallic salts on the growth of, 648.
Asphalt, its extraction, preparation, and uses, 660.
Aspirator, a new form of, 837.
Assimilation by sheep of various ages, 519.
Atacamite, 1010.
Atacamite, artificial production of, 1107.
Atomic weights of cerium, lanthanum, and didymium, 1004.
Atractylic acid, 638.
Atropine, detection of, 1062.
Atropine, solubility of, in chloroform, 535.
Attraction, elective, 342.
Augite, 735.
Augite into talc crystals, pseudomorphosis of, 357.
Aurin, 434.
Aurin, crystalline form of, 436.
Aurin, compound of, with sulphur dioxide, 437.
Aurin-ammonium bisulphite, 438.
Aurin-potassium bisulphite, 438.
Aurin-sodium bisulphite, 439.
Aurora borealis, spectrum of the, 242.
Aurous chloride, 245.
Autumnal colouring of leaves, and formation of vegetable acids, 1049.
Aventurin orthoclase, 248.
Avic acid, occurrence of, in guano, 1052.
Axinite from Botallack in Cornwall, crystalline form of, 1012.
Azadirachta Indica, chemical examination of the bark of, 1157.
Azobenzene bromides, 386.
Azobenzene, capability of, to form addition-products, 383.
Azobenzene, compound of, with benzene, 499.
Azobenzoic acid, composition of, 1142.
Azoderivatives of benzene, chlorinated, 167.
Azoderivatives of liquid and solid nitrotoluene, 1027.
Azonaphthoic acid, 392.
Azophenylene, 1141.
β-Azotoluene, 1027.
Azoxybenzene, 1028.
Azoxybenzene, reduction of, to azobenzene, 385.
Azurite, composition and formation of, 1110.

B.

Bacillus subtilis, presence of, in yeast, 975.
Bacteria, note on the origin of, 406.
—— transformation of, into microzymes in the alimentary canal, 1048.
Balance-sheet of the Chemical Society, (March 27, 1873,) 790.
Barbituric acid, action of cyanogen gas on, 282.
Barium hydrate, heat of formation of, 1097.
Barium hypophosphite, 5.
Barium œnanthylate, 1078.
Barley, assimilation of phosphates by, 87.
Barometer with self-registering apparatus, 590.
Barometric pressure, influence of, on the mena of life, 641, 762, 1249.
—— —— influence of, on the phenomena of vegetable life, 1250.
Baryta, preparation of, from barium sulphide, 414.
Basalt, solvent action of gypsum on, 1202.
Basalt and hydrotachylyte of Rossdorf, Darmstadt, 1211.
Basalts of Styria, 1115.
Base, division of the same, between two acids, 36.
Base produced by action of HI. and P. on codeine, at 135°, product obtained from the, by the action of silver nitrate and nitric acid, 1088.
Battery, Bunsen's chromic acid, 125.
Battery, improved form of Grove's, 590.
Bauxite, analysis of, 673.
Bauxite, use of, for lining smelting furnace, 672.
Beech-blight, a new, 1156.
Beer, boric acid as a preservative of, 100.
Beer, crystalline precipitate produced in, on the addition of potassium carbonate, 658.
—— detection of picrotoxin in, 94.
—— determination of extract in, 95.
Beer-coolers of zinc, 958.
Beer and wort, estimation of the extract-contents of, 655.
Beer-yeast, physiological theory of, alcoholic fermentation by, 405.
Bees-wax, testing of, for adulterations, 194.
Beet, changes in the sugar of, 659.
—— determination of the amount of juice in, by means of polarisation, 1262.
—— experiments on the cultivation of, in the Campagna Romana, 1254.
Beet-juice, process for purifying and decolorising, 424.
Beet-root, respiration of, and air enclosed in, 1059.
Beet-root ash, preparation of rubidium from, 474.
—— —— working of, 99.
Beet (sugar-), presence of arabic acid in, 1124.
Beet-sugars, estimation of the yield of pure sugar from various raw, 296.
Beetle eudiometer, 292.
Benzacrylic acid, formation of, by distillation of a mixture of barium benzoate and sulphocyanate, 363.
Benzamide, crystalline form of, 585.
Benzbetaine, trimethylated, 1146.
Benzene, action of potassium on, 382.
—— compound of azobenzene with, 499.
—— compound of, with chloral, 885.
—— compound of, with formaldehyde, 884.
—— chlorinated, azoderivatives of, 167.
—— dinitro-derivatives of the higher homologues of, 887.
—— pentachlorinated, 499.
—— regarded as methyl-pentol, 885.
Benzene-derivatives, constitution of, 1132, 1134.
—— —— isomeric series of, 1224.
Benzene-sulphonic acid, brominated, 1142.
Benzhydroxamic acid, crystalline form of, 584.
Benzile, constitution of, 1037.
Benzoate of barium, product of the distillation of, 276.
—— —— distillation of, with barium sulphocyanate, 363.
Benzoic acid, action of, on phenylic mustard oil, 757.
—— —— action of sodium formate on, 1238.
—— —— action of sulphocyanates on, 636.
—— —— conversion of, into metachlor-ortho-oxybenzoic acid, 756.
—— —— preparation of crystallised, from gum benzoïn, 902.
Benzoïn, constitution of, 1037.
Benzophenone chloride, 171.
Benzoxyazobenzene, 1027.
Benzoyl chloride, reaction of, with anthrapurpurin, 430.
Benzoyl-hydrocœrulignone, 1033.
Benzoyl-sulpho-urea, 1132.
Benzyl alcohol, occurrence of, in liquid storax, 65.
Benzyl chloride, action of, on aromatic hydrocarbons, 272.
Benzyl chloride, action of, on naphthylamine, 1147.

Benzylnaphthalene, 891.
Benzyl-phenyl ketone, 1037.
Benzyl-sulphonic chloride, 1040.
Benzyl-toluene, 1225.
Benzyl-toluene, action of heated lead oxide on, 1135.
Benzyl-xylenes, iso- and para-, 272.
Beraunite, 851.
Berlin water-supply, 1267.
Beryl, crystalline form of, 1011.
Bessemer flame, spectrum of, 461.
Bessemer iron, estimation of oxygen in decarbonised, before addition of Spiegeleisen, 298.
Bessemer process, facts relating to the, 299.
Bessemer process, investigations on the, 540.
Bessemer steel, distribution of carbon in, 953.
Beta-nitrotoluene, 274.
Bichrome battery, salts used by Vorsin and Dronier for the, 947.
Bile, estimation of sulphur and of taurocholic and glycocholic acid in, 536.
Bile-acids, presence of, in normal urine, 928.
Bile-pigment, oxidation-product of, 288.
Bile-pigments, and their detection by the spectroscope, 78.
Bismuth, new reaction for, 531.
Bismuth subnitrate, presence of silver in commercial, 308.
Bismuth and lead alloys, spontaneous disintegration of, 603.
Bismuthoferrite, 478.
Bitter-almond oil, action of nascent hydrogen on, 1139.
Bitter apple as an article of food, 649.
Biuret, tripropylic, 1119.
Black colour for paraffin and other materials for candle-making, 205.
Black dye for woollen and semi-woollen goods, 208.
Blast-furnace, distribution of temperature in the, 666.
Blast-furnace slags, various uses of, 656.
Bleaching of rape, poppy, and linseed oils, 100.
Bleaching powder, a few facts concerning, 1169.
Blood, amount of iron in, 288.
—— in apnœa, 1247.
—— detection of, by formation of hæmin crystals, 1167.
—— determination of the absolute mass of, 646.
—— distribution of iron in the constituents of, 398.
—— estimation of hæmoglobin in, 1245.
—— expulsion of carbonic oxide and nitric oxide from, 397.
Blood of mammals, birds, and fishes, number of red corpuscles in the, 289.
—— oxidising power of, 641.
—— of polyps and crabs, and of the squalus and ray, 1150.
—— presence of dissolved earths and phosphoric acid in alkaline, 925.
—— saccharifying ferment of, 1245.
Blood-letting, amount of metamorphosis of albumin after, 288.
—— —— tissue-change in the animal body after, 644.
Blood-spots, detection of, 298.
Blowpipe, alcoholic vapour, 92.
Blowpipe chemistry, spectra of some cobalt-compounds in, 1161.
Blue dyeing, 422.
Blue stamp colour, 423.
Boiler-crusts, combustible, 660.
Boiling points, determination of, at the normal pressure, 1103.
Boiling points of homologous organic compounds, law of, 237.
Boldo, presence of an organic alkali in, 179.
Bone-black, preparation of active, 424.
Bone phosphates, 354.
Bones, brittleness of, in horned cattle, 924, 1244.
—— experimental modifications of the composition of, 518.
—— metamorphosis of, 923.
—— of rabbits of various ages, composition of the, 290.
Borate of calcium from Oregon, 1206.
Boric acid, flame-test for, 1055.
—— —— as a preservative for milk and beer, 100.
Bornite, or peacock copper ore, from Vielm-Salm, Belgium, 1114.
Borofluoride of potassium, 39.
Boron chloride, reactions of, 351.
Boropropylic ethyl, 872.
Brain, composition of the grey and white substances of the, 922.
Brasilin, 899.
Brass, to colour blue, like steel, 1273.
Bread, poisoning of, 424.
—— vegetable parasites of, 85.
Brewing, Pasteur's new process for, 958.
Bricks, colours of, 951.
Brittleness of the bones in cattle, 924, 1244.
Bromacetone, 496.
Bromacetyl bromide, action of, on zinc methide, 48.
Bromadipic acid, 623.
Bromate of erbium, 139.
Bromate of yttrium, 137.

University of Michigan

Bromazoxybenzenes, 385.
β-Bromazotoluenes, 1027.
Bromhydromuconic acid, 622.
Bromic acid, heat of formation of, 1189.
Bromide of erbium, 139.
Bromide of ethylene, preparation of, 1118.
Bromide of potassium, detection and estimation of, in iodide of potassium, 527, 528.
Bromide of potassium, preparation of pure, 135.
Bromide of potassium, testing of, 191.
Bromide of sulphur, 823.
Bromide of yttrium, 137.
Bromides, preparation of, 1104.
Bromides of propylene and butylene, preparation of, 487.
Brominated ether, 487.
Bromine, affinity of hydrogen for, 126.
—— affinity of, for oxygen, 1096, 1188.
—— detection of, in presence of urea, 190.
—— estimation of, by Carius's method, 527.
Bromine and iodine in apatite, 357.
Bromobenzene, action of, on aniline, 73.
Bromobenzenesulphonic acids, 1142.
Bromodiphenyl ketone, 1036.
Bromodiphthalyl, 68.
Bromoform, conversion of, into carbon tetrabromide, 865, 1013.
Bromonitro-ethanes, 611.
Bromosalicylanilide, 907.
Bromotoluene, derivatives of, 886.
Bronze, analysis of an antique, 1201.
Brucine, action of, on the organism, 79.
—— detection of, 93.
—— solubility of, in chloroform, 535.
Buchonite, a rock belonging to the nephelinite group, 608.
Building stone, the so-called "volcanic," 952.
Building stones, fire-resisting qualities of various, 660.
Bunsen's flame, new method of testing with, 1158.
Butter, testing of, for adulterations, 1064.
Butyl chloride, tertiary, from butylene, 368.
Butyl compounds, normal, 367.
Butyl iodide, preparation of, 1014.
Butyl valerate, density, boiling point and rotatory power of, 1017.
Butylene bromide, preparation of, 487.
Butylene, tertiary butyl chloride from, 368.
Butyl-sulphuric acid, 367.
Butyric acid of fermentation, crude, 375.
Butyric acid, new researches on, by Pierre and Puchot, 615.
Butyric acid from various sources, 373.

C.

Cadmium, combinations of, with phosphorus, 728.
Cadmium hypophosphite, 10.
Cadmium sulphate, action of a copper-cadmium couple on a solution of, 464.
Caffeine, estimation of, in tea-leaves, 411.
—— different methods employed for the quantitative estimation of, 1264.
—— solubility of, in chloroform, 535.
—— variations in the amount of urea excreted under the influence of, 1248.
Calcio-sodic felspars, two, from the Ural, 249.
Calcium borate from Oregon, 1206.
Calcium carbonate, basic, in hydraulic cements, 97.
Calcium carbonate, precipitation of, by Potamogetons, 765.
Calcium dioxide, 810.
Calcium hydrate, heat of formation of, 1097.
Calcium hypophosphite, 8.
Calcium œnanthylate, 1078.
Calcium phosphate, neutral, 353.
Calcium saccharate, monobasic, 876.
Calcium salts, poisonous properties of, 521.
Calcium sulphate, solubility of, in glycerin, 875.
Calcspar, appearances produced in, by pressure, 257.
Calcspar, hemimorphism in, 1012.
Calcspar from the Rödefjord, Iceland, 857.
Calculi, urinary, structural composition of, 517.
Calculus, new kind of, from oxen, 398.
Caldeiras of Furnas, in the island of San Miguel (Azores), analysis of the water of the, 1012.
Calico-printing, iron-liquor for, 1272.
Calico-printing, use of sodium albuminate in, 1271.
Calorimetric researches on the state of bodies in solutions, 838.
Camphor, constitution of, 1228.
Camphor, action of phosphorus pentachloride on, 688.
Camphor, oxycymene from, 1228.
Camphor-cymene, oxidation of, in the animal organism, 64.
Camphoric acid, 505.
Camphoric acid, constitution of, 72.
Camphoric acid, optically inactive, 1038.
Candle materials, black colour for, 205.

Candle-nuts, composition of, 85.
Cane (Sorgho), composition of the seeds of two varieties of, 402.
Cane-sugar. See Sugar.
Cane-sugar, action of silver nitrate on, 46.
Cantharides, the active principle contained in the aqueous distillate of, 511.
Caoutchouc, manufacture of, 956.
Capillary spaces, phenomena produced by molecular attraction in, 1185.
Capillary and electric phenomena, relation between, 1094.
Caproic acid in crude fermentation butyric acid, 375.
Caproic acid, normal and ordinary, 267.
Carbazol, synthesis of, 1034.
Carberins, 371.
Carbodiimide, 1023.
Carbohydrates, and the mode in which they are digested and absorbed, 394.
Carbohydroquinonic acid, relation of, to protocatechuic acid, 1145.
Carbolic acid. See Phenol, 79.
Carbon, the so-called chemical, 1276.
—— affinity of hydrogen for, 127.
—— colorimetric estimation of combined, in steel, 295.
—— distribution of, in Bessemer steel, 953.
—— negative or passive condition of, in graphite, diamond, or charcoal, 128.
—— refraction-equivalent of, 460.
—— specific heat of, at high temperatures, 239.
Carbon and iron, action of, on carbonic anhydride at a red heat, 37.
Carbon battery, effect of surrounding the negative electrode of a, with charcoal powder, 25.
Carbon chlorides, 364.
Carbon dioxide, action of carbon and iron upon, at a red heat, 37.
—— —— amount of, in atmospheric air, 595.
—— —— amount of, in the air of the soil of Munich at different depths and at different times, 361.
—— —— amount of, excreted by the human skin, 396.
—— —— apparatus for the quantitative estimation of, in gases, 1053.
—— —— proposed new method of estimating, 938.
—— —— influence of varying atmospheric pressure on the proportion of, to alcohol in alcoholic fermentation, 978.
Carbon dioxide, influence of the spectrum colours on the decomposition of, by plants, 400.
Carbon dioxide, physical properties of, 589.
Carbon dioxide, liquid, 350.
Carbon dioxide and marsh-gas, influence of electricity on mixtures of, 864.
Carbon filters, value of, in purifying drinking waters, 302.
Carbon monoxide, the chief product of combustion in the blast-furnace, 667.
—— —— electric decomposition of, 744.
—— —— elimination of, from blood, 397, 646.
—— —— estimation of, combined with hæmoglobin, 646.
—— —— reactions occurring in the preparation of, from potassium ferrocyanide, 497.
Carbon monoxide and hydrogen, influence of electricity on mixtures of, 864.
Carbon oxysulphide, 350.
Carbon-pictures on gypsum or earthenware plates, 424.
Carbon sulphide, action of, on various amides, aldehydes, and alcohols, 497.
—— —— detection of, in mustard oil, 1054.
—— —— application of, to the freeing of wool from fats, 658.
Carbon sulphochloride, action of, on perchlorinated methyl-mercaptan, 263.
Carbon tetrabromide, conversion of bromoform into, 865, 1013.
Carbonate, normal butylic, 367.
Carbonate of calcium, basic, in hydraulic cements, 97.
Carbonate of erbium, 139.
Carbonate of magnesium, action of calcium sulphate on, in presence of common salt, 475.
Carbonate of sodium, action of silica and analogous oxides on, 135.
Carbonate of sodium, action of silica and some analogous oxides on, at high temperatures, 243.
Carbonates, alkaline, formation of, from the sulphates in the moist way, 1003.
Carbonates, metallic, decomposition of, by heat, 814.
Carbonates of yttrium, 138.
Carbonic anhydride. See Carbon dioxide.
Carbonic ethers, indices of refraction of the sulphuretted substitution-products of, 620.
Carbonic ethers, isobutylic, 266.

Carbonic oxide. See Carbon monoxide, 397.
Carbonyl-compounds of isobutyl, 872.
Carbopyridic acid formed by oxidation of nicotine, 509.
Cardimide, syn. with Cyanamide, 1023.
Carlsquelle at Helmstedt, analysis of the, 1213.
Carob, butyric acid from, 374.
Carpets, detection of arsenic in, 943.
Cartilage of the shark, 1243.
Cascade furnace for iron smelting, 671.
Casein, coagulation of, by rennet, and on the so-called amphoteric reaction, 514.
Casein and alkali-albuminate, question as to the identity of, 188.
Cast-iron, calorimetric method for the estimation of manganese in, 407.
Cast-iron, solution of gases in, 729.
Cellular tissue diffused throughout the organism of the vertebrata, properties and composition of, 920.
Cellulose, action of sulphuric acid on, 370.
Cellulose, determination of, 534.
Cement for glass and porcelain, 97.
Cements, hydraulic, basic calcium carbonate in, 97.
Cephalopods, observations on some liquids of the organisms of, 1150.
Ceratonia Siliqua, butyric acid from the fruit of, 374.
Cerium, atomic weight of, 1004.
Cerium hypophosphite, 9.
Cerium metals, atomic weights of, 601.
Ceroso-ceric salts, 601.
Chalk, removal of, from animal charcoal by means of acetic (pyroligneous) acid, 99.
Chamomile, Roman, oil of, 1226.
Charcoal, acceleration of coagulation by, 185.
Charcoal, action of, on organic nitrogen, 14,
Charcoal, animal, decolorising action of, 302.
Charcoal, animal, determination of the matter absorbed by, in refining sugar, 1061.
Charcoal, animal, removal of chalk from, by acetic (pyroligneous) acid, 99.
Charcoal, animal, revivification of, 303.
Charcoal, animal, valuation of, 1060.
Charcoal, moulded, water-filters of, 1268.
Cheese, analysis of, 1266.
Chemical force, distribution of, in the spectrum, 232.
Chemical Society, Proceedings at the Meetings of (1872–1873), 769.
Chemically active rays, absorption of, in the sun's atmosphere, 712.
Childrenite, 103.
Chloracetal, 1217.
Chloracetamides, 1129.
Chloracetate, methylic, 1117.
Chloracetonitriles, 1128.
Chloracetyl chloride, action of, on aniline and toluidine, 911.
Chloracetyl urea, 758, 880.
Chloral, 284.
—— action of glacial acetic acid on, 878.
—— action of potassium cyanide on, 628.
—— action of sulphuric acid on, 878.
—— action of trimethylamine on, 878.
—— compound of, with benzene, 885.
—— volumetric estimation of, 1163.
Chloral and acetonitril, 626.
Chloral hydrate, decomposition of, by the combined action of glycerin and heat, 264.
Chloranhydride of glyceric acid, decomposition-products of, 1020.
Chloranilic acid, constitution of, 388.
Chlorate of erbium, 139.
Chlorate of glucinum, 1004.
Chlorate of yttrium, 137.
Chlorates alkaline, reduction of, to chlorides, by the action of zinc and copper in presence of water, 547.
Chlorates, preparation of, by means of aluminium chlorate, 950.
Chlorethylin, silicon-diethylic, 50.
Chlorhydrins, silicopropionic, 871.
Chloric acid, estimation of, 547.
—— —— heat of formation of, 1188.
Chloride of erbium, 139.
Chloride, ethylic, action of, on sulphuric anhydride, 1216.
Chloride, ferrous, titration of, with potassium permanganate, 531.
Chloride of glucinum and mercury, 1004.
Chloride (mono) of iodine, 813.
Chloride of Iron Spa, Harrogate, monthly analytical examinations of, 1091.
Chloride of lime, composition of, 200.
Chloride of sodium, its importance in the animal organism, 1042.
Chloride of sodium, formation of sodium sulphide by the action of hydrogen sulphide on, at high temperatures, 456.
Chloride, stannic, preparation of, 1274.
Chloride of titanium, combinations of, with ethers, 1015.
Chloride of yttrium, 137.
Chlorides, action of, on sodium ethylate, 866.
Chlorides of aromatic acids, action of the, on aromatic hydrocarbons, 1233.
Chlorides of boron and silicon, reactions of, 351.

Chlorides of carbon, 364.
Chlorides contained in certain coals, 302.
Chlorides of propylene, 1015.
Chlorinated nitro-compounds, action of sodium on, 168.
Chlorine, affinity of hydrogen for, 126.
—— affinity of, for oxygen, 1188.
—— estimation of, by Carius's method, 527.
—— new apparatus for the evolution of, 96.
—— mutual action of hydrochloric acid and oxygen on certain metallic bodies in producing a continuous stream of (Deacon's process), 1103.
—— De Lalande and Prudhomme's method of preparing, 1104.
—— Tessié du Mothay's method of preparing pure, 96.
—— testing of potassium bromide for, 528.
—— treatment of dilute, 949.
Chlorine and its compounds, heat evolved in the reactions of, 1094.
Chlorine-compounds, organic, formation of, 364.
Chlorine and hydrogen, combination of, in the absence of light, 724.
Chlorite, 735.
Chlorite, conversion of garnet into, 855.
Chlorobenzenes, 166.
Chlorobenzyl sulphide, compound ($C_{14}H_8S_2$) produced by dry distillation of, 1032.
Chlorocarbonate, isobutylic, 266.
Chlorocarbonic ethers, sulphuretted, 1222.
Chlorochrysin, 1237.
Chlorocodide, base homologous with, formed by the action of hydrochloric acid on morphine, 215.
Chlorocresol, 898.
Chloro-derivatives of acetone, 159.
Chloro-derivatives of the ethylic series, boiling points and molecular volumes of, 1014.
Chlorodimethylaniline, 279.
Chlorodiphenyl ketone, 1036.
Chloroform, estimation of alcohol in commercial, 533, 1059.
—— correction of some erroneous statements concerning the production of, 364.
—— use of, in forensic chemistry, 535.
—— as a solvent and means of separation for vegetable poisons in forensic investigations, 412.
Chloromuconic acid, 622.
Chloronitrophenols, constitution of, 633.
Chloronitrotoluene, action of sodium on, 169.
Chlorophenol (meta-) and its nitro-derivatives, 65.
Chlorophenols, constitution of, 633.
Chlorophyll, absorption-bands of, 996, 997.
—— in the residues of digestion, spectroscopic examination of, 521.
—— accidental lines in the spectrum of, 997.
—— researches on, 513.
—— the part borne by, in the assimilative action of plants and in the spectrum of leaves, 401.
—— spectral phenomena presented by different solutions of, 996.
—— spectrum of, 341, 1258.
—— spectrum, modifications of, under the influence of alkalis, 582.
Chlorosalicylic acid, 756.
Chlorosulphobenzoic acid (ortho-), 1136.
Chlorosulphuric acid, 724, 841.
Chlorotetramorphine, product obtained from, by the action of silver nitrate and nitric acid, 1088.
Chlorotoluene-sulphonic acids, 1136.
Chlorotoluenes, 1135.
Cholesterin (iso-), 1219.
Choleverdin, reducible product of, 78.
Chromate basic ferric, 657.
Chromate of lead, estimation of lead sulphate in commercial, 1056.
Chromate of lead, action of nitric acid on, 1005.
Chromates, alkaline, 354.
Chrome-alum, preparation of, 848.
Chromic acid alum, reasons why it cannot be formed, 1005.
Chromic acid battery, Bunsen's, 125.
Chromic acid, new method of preparing, 39.
Chromium trioxide, action of, on iodine, 141.
Chrysin (chrysinic acid), presence of, in the buds of *Populus monolifera* or *balsamifera*, 1236.
Chrysogen, fluorescent relations of, 235.
Cinchona-alkaloïds, 914.
Cinchona alkaloïds, action of nascent hydrogen on, in acid solutions, 1178.
Cinchona alkaloïds, Hager's method of estimating, 653.
Cinchona alkaloïds, optical properties of some modifications of the, 1177.
Cinchona-barks, distribution of alkaloïds in, 525, 931.
Cinchona succirubra, leaves of, 524.
Cinchonas, effect of manures on the alkaloïdal yield of, 523.

Cinchonine, oxidation-products of, 1041.
—— solubility of, in alcohol, chloroform, and mixtures of the two, 410.
—— solubility of, in chloroform, 535.
Cinnamate and acetate of calcium, products of the dry distillation of, 901.
Circularly polarising organic bodies, synthesis of, 743.
Citraconic acid, electrolysis of, 378, 1221.
—— —— reaction of, with ferric chloride, 377.
Citric acid, and its derivatives, 496.
Citrullus colocynthis (bitter apple) as an article of food, 649.
Clandestina rectiflora, stearoptene from the flowers of, 513.
Clays, fire-resisting powers of various, 951.
Clover, composition and feeding value of, at different stages of growth, 649.
Coal, gases enclosed in, 483.
Coals, chlorides contained in certain, 302.
Coals, composition and technical properties of, 1269.
Coal-ashes, amount of phosphoric acid in, 1066.
Coal-dust, artificial fuel from, 420.
Coal-gas, estimation of ammonia in, 409.
—— —— effect of india-rubber tubes on the illuminating power of, 300.
—— —— continuous process for purifying from sulphur and ammonia, 1270.
—— —— sulphurous impurity in, 299.
—— —— its effect on trees and shrubs, 401.
—— —— influence of, on the growth of trees, 647.
Coal-tar oil, hydrocarbon from isomeric with anthracene, 177.
Coal-tar and pitch, 419.
Cobalt compounds, spectra of some, in blowpipe chemistry, 1161.
Cobalt hypophosphite, 10.
Cobalticyanide of yttrium, 138.
Cobalt ores, analysis of, 1261.
Cobalt, separation of, from zinc, 1261.
Cobaltiferous magnesium sulphate, 1114.
Cochineal, nature of the black spots produced in dyeing with, 657.
Cocoa-nuts, composition of, 87.
Codeine, solubility of, in chloroform, 535.
—— action of hydrochloric acid on, 916.
—— derivatives, action of silver nitrate and nitric acid on, 1087.
Cœlestin from Rudersdorf near Mokattan, crystalline forms of, 1012.
Coercive action of salts on water, new method of studying, 129.
Cœrulignone, a product of the wood-vinegar manufacture, 70.
Cœrulignone, derivatives of, 1033.
Coffee, method of distinguishing pure ground, from coffee substitutes, 1065.
—— influence of, on the excretion of urea, 1152.
—— variations in the amount of urea excreted under the influence of, 1248.
Coffee-tree, constituents of the ash of various parts of the, 525.
Coke, removal of sulphur from, 1270.
Colchicine, solubility of, in chloroform, 535.
Cold, effects of exposure to, 287.
Cold, industrial production of, by the expansion of permanent gases, 716.
Collodion, use of aniline colours dissolved in, 207.
Collodion of extraordinary tenacity, 658.
Collodion preparations, 540.
Colophony, oxidation-products of, 889.
Colouring of leaves, autumnal, 1049.
Colouring-matter found in the sarcophagus of St. Ambrose, at Milan, 657.
Colouring-matter, blue, obtained from apomorphine and other morphine derivatives, 1083.
Colours, indestructible, 959.
Colours, recognition of, on textile fabrics, 654.
Combustion, lecture experiments on, 1186.
Combustion, slow, 128.
Combustion, spontaneous, with reference to its prevention in flour mills, 660.
Combustion, respiratory, 398.
Condensation of a mixture of air and steam upon cold surfaces, 1000.
Conglutin, production of aspartic acid by oxidation of, 628.
Conine, butyric acid from, 374.
Conine, solubility of, in chloroform, 535.
Copper, atomicity of, 1011.
—— extraction of, by Monnier's process, 417.
—— precipitation of silver by, 1007.
Copper arsenide, 850.
Copper-assay, Cornish, loss through volatilisation in the, 192.
Copper-cadmium couple, action of, on a solution of cadmium sulphate, 464.
Copper-glance from Catamarca, 851.
Copper œnanthylate, 1080.
Copper-plating of iron and steel, 955.
Copper, precipitation of silver by, 1007.
Copper-process of Hunt and Douglas, 952.

Copper-pyrites, extraction of the precious metals from, 97.
Copper-salts, reaction of, with phosphorous and hypophosphorous acid, 13.
Copper-solution, action of an alkaline, on cane-sugar, and on mixtures of cane and grape-sugars, 193.
Copper-solutions for the estimation of sugars, 410.
Copper-zinc couple, action of, on organic bodies, 445, 678, 961.
Copper-zinc couple, observations on the nature of the black deposit in the, 452.
Copper-zinc couple, additional notes on the, 969.
Corallin, thioamylic and parathionic acids from the mother-liquors of, 278.
Corallin, yellow, 434.
Cork, specific gravity of, 958.
Corks for bottles, method of rendering air-tight and indestructible, 308.
Corpuscles, number of red, in the blood of mammals, birds, and fishes, 289.
Corundum region of North Carolina and Georgia, 257.
Corundum of North Carolina, Georgia, and Montana, and the minerals accompanying it, 1204.
Corynocarpus. See Karaka.
Cotton, new fuchsine dye for, 208.
Cotton goods, finishing of, 1274.
Cows' butter, butyric acid from, 374.
Creasote and phenol, distinction between, 193.
Cresol derivatives, 898.
Cresotic acid, 904.
Crocidolite, South African quartz, a pseudomorph after, 739.
Crotonylene, identity of, with ethylacetylene, 1014.
Crust produced upon terrestrial rocks by atmospheric agency, compared with the black coating of certain meteorites, 141.
Crustaceans, observations on some liquids of the organisms of, 1150.
Crystalline antimony, formation of, 1007.
Crystalline dissociation, 31, 32, 129.
Crystallographic notes, 471.
Crystallographico-optical investigations with especial reference to isomorphous bodies, 994.
Crystallography, 857, 1011.
Crystallography, contributions to, by C. Klein, 584.
Crystals, isomorphous structure of, 130.
Crystals, mechanical separation of complex, 1194.
Cuban, occurrence of in Sweden, 851.
Cubebic acid, 1148.
Cubebs, constituents of, 1148.
Cucúyos, analysis of the luminous organs of the Mexican, 924.
Cummin oil, cymene from, 694.
Cuprotetrammonium and thallium, oxide of, 476.
Cuprous and ferric oxides, natural compound of, 1107.
Cuprous oxide of a fine vermilion colour, preparation of, 355.
Curarine, detection of, 654.
Curcumin, 504.
Cyanamide, addition-products of, 1024.
Cyanamide, metallic derivatives and constitutional formula of, 1023.
Cyanate, isopropylic, 367.
Cyanide of allyl, compound of, with ethyl alcohol, 879.
Cyanide of potassium, use of, for estimation of mercury, 565.
Cyanide of stannopropyl, 366.
Cyanides of negative radicals, volatility of, 1129.
Cyanides and sulphocarbimides, aromatic, mutual convertibility of, 908.
Cyanite, mineral resembling, in the Rhenish basalts, 248.
Cyanocarbonic ethers, 381.
Cyanoform, 362.
Cyanogen, combination of, with hydrogen, under the influence of the silent electric discharge, 865.
Cyanogen-derivatives of acetone, 59.
Cyanomalonyl-uric acid, 282.
a-Cyanonaphthalene, 1241.
Cyclamen, chemical researches on the, 764.
Cymene from camphor by the action of phosphorus pentachloride, 690.
Cymene, new conversion of turpentine into, 889.
Cymene from Cummin oil, 694.
Cymene, derivatives of, 1227.
Cymene from the dibromide of the terpene of nutmeg oil, 693.
Cymene from hesperidene dibromide, 691.
Cymene from nutmeg hydrocarbon, 690.
Cymene from nutmeg oil, 551.
Cymene from oil of turpentine, 690.
Cymene from various sources, 686.
Cymene from various sources optically considered, 970.
Cymene, sulphur derivatives of, 1029.
Cymene, dinitro-, 888.
Cymene mercaptan, 1030.
Cymenes, action of chromic liquor on, 696.
Cymenes, boiling points of, 696.
Cymenes from camphor, ptychotis oil, and thymol, 1227.

Cymenes, specific gravity, refractive index, and dispersion of, 699.
Cymyl-phenyl ketone, 1036.
Cystine, 74.

D.

Decavanadate of thallium, 332.
Decomposition, double, in absence of water, 588.
Decompositions, saline, researches on, 589.
Dehydration in the animal body, 287.
Deoxybenzoïn, 502.
Deoxybenzoïn and analogous bodies, 1037.
Depilatory, new, 308.
Designs, application of the reduction of silver salts to the reproduction of, 537.
Detonants, various vibratory motions produced by, 30.
Dextrin, determination of, 534.
—— modifications of, 394.
—— separation of, from starch, 394.
Dextroglucose, preparation of pure, 265.
Dextroglucose and sodium chloride, use of the compound of, for the titration of Fehling's solution, 265.
Dextrotartaric acid, conversion of, into racemic acid, 166.
—— —— formation of, from ethylene, 743.
Diabase, 736.
Diacetone-cyanhydrin, 60.
Diacetyl-alizarin, 20.
Diacetyl-alizarin, colouring-matter obtained from, by the action of nitric acid, 430.
Diacetyl-anthraflavic acid, 20.
Diacetyl-phenanthrene-hydroquinone, 895.
Diallyl, 1122.
Diamidobenzophenone, 171.
Diamido-diphenylmethane, 170.
Diamidohydrin hydrochloride, 1121.
Diamidostilbene, 890.
Diamond, behaviour of, at high temperatures, 1195.
Diamond fuchsine, 208.
Diamond hardness, production of, in graving-tool steel and steel wire, 418.
Diamylphosphine, 882.
Diapodimorphine, 917.
Diastase group, ferments belonging to the, 82.
Diazoanthraquinone nitrate, 389.
Dibenzhydroxamic acid, crystalline form of, 584.
Dibenzoyl-anthraflavic acid, 22.
Dibenzyl, action of heated lead oxide on, 1135.
Dibenzyl, crystalline form of, 383.
Dibenzyl-dicarbonic acid, 390.
Dibenzyl-disulphonic acid, 1240.
Dibenzyl ketone, oxidation of, 1037.
Dibromadipic acid, 623.
Dibromanthrapurpurin, 432.
Dibromazobenzene, 383.
Dibromazoxybenzene, 385.
Dibromexcretin, 920.
Dibromobenzene, 640.
β-Dibromobenzene, 63.
Dibromobenzene, action of sodium on crystalline, 62.
Dibromobenzenesulphonic acid, 1039, 1142.
Dibromochrysin, 1236.
Dibromofumaric acid, formation of, by the action of bromine on mucobromic acid, 625.
Dibromomannite, 161.
Dibromonitro-ethane, 611.
Dibromopropionic acid from propionic acid, 1018.
β-Dibromopropionic acid, monobromacrylic acid from, 1220.
Dibromosuccinic acid, action of bromine on, 621.
Dibromotetranitromannite, 161.
Dichloracetic acid, new method of preparing, 627.
Dichloracetone, 1223.
Dichloracetone, action of potassium hydrate on, 379.
Dichlorazoxybenzene, 168.
Dichlorazoxytoluene, 169.
Dichlorethoxyl-ethylene, 867.
Dichlorethyl oxide, 154.
Dichlorethylene chloride, action of, on sodium ethylate, 867.
Dichlorhydrin, action of ammonia on, 1121.
Dichlorhydrin, formation of allylene dichloride by dehydration of, 1218.
Dichlorhydrin, preparation of, 1120.
Dichlorobenzoic acid, 1141.
Dichlorodimethylaniline, 279.
Dichlorodiphthalyl, 68.
Dichloromannite, 160.
Dichloro-mononitro-azoxybenzene, 168.
Dichloronaphthylhydrenic glycol, 1034.
Dichlorophthalyl, 393.
Dichloroquinonic acid, constitution of, 388.
Dichloro-tetranitromannite, 161.
Dicyanodiamide, 1024.
Didenlactamic acid, 269.
Didymium, atomic weight of, 1004.
Diethyl fumarate, 56.
Diethyl suberate, synthesis of, 495.
Diffusion of gases through porous walls, 835.
Digestion, spectroscopic examination of

the chlorophyll in the residues of, 521.
Digestive fluid of the ray, 1150.
Digitalin, detection of, 1062.
Diglycollamic diuramide, 382.
Di-iodhydrin, 1121.
Di-iodochrysin, 1237.
Di-isopropylphosphine, 882.
Dimethylamidanisic methyl-ether, formation of, from trimethyl-anisbetaine, 1146.
Dimethylamidobenzoic methyl-ether, formation of, from trimethyl-benzbetaine, 1146.
Dimethylaniline, substitution-products of, 279.
Dimethyl-diethyl-methane, ketone derived from, 322.
Dimethylphosphinic chloride, 884.
Dinaphthyl-dichlorethylene, 891.
Dinaphthyl ketone, 1035.
Dinaphthyl-trichlorethane, 891.
Dinas bricks and their raw material, pyrometric examination of, 192.
Dinitraniline, formation of, by the action of ammonia on dinitranisol, 280.
Dinitrobenzile, 502.
Dinitrobenzoic acid, action of sodium amalgam on, 1141.
Dinitrobenzophenone, 170.
Dinitrobromobenzene, 167.
Dinitrochlorobenzene, action of phenol and caustic potash on, 1026.
Dinitro-derivatives of the higher homologues of benzene, 887.
Dinitroheptylic acid, action of sodium amalgam on, 1019.
Dinitrophenanthrene-quinone, 895.
Dinitrophenols, isomeric, 1030.
Dinitrostilbene, 890.
Dinitro-uramidodracylic acid, 178.
Diosmose, investigations on, 346.
Dioxides of calcium and strontium, 808.
Dioxyadipic acid, 623.
Dioxybenzoic acids, 506.
Dioxysulphocarbonate, isobutylic, 266.
Dioxytrinitrazobenzene, 1028.
Diphenic acid, 892.
Diphenyl, 749.
Diphenyl, formation of, by distilling acetanilide with sodium phenate, 1240.
—— formation of, from phenanthrene-quinone, 895.
—— compound of, with formaldehyde, 885.
Diphenylamine, formation of, by the action of bromobenzene on aniline, 73.
Diphenylamine as a test for nitrous and nitric acids, 91.
Diphenylamine-sulphonic acids, 74.
Diphenyl-anthraquinone, 894.
Diphenyl-benzene, 63, 888.
Diphenyl (hexoxy-), 1033.
Diphenylene ketone, 894.
Diphenylene ketone, formation of, from phenylbenzoic acid, 750.
Diphenylene ketone, a new hydrocarbon from, 755.
Diphenylene-methane, 755.
Diphenyl-methane, compound of, with formaldehyde, 885.
—— —— derivatives of, 170.
—— —— synthesis of, 1225.
Diphenylmethane-disulphonic acid, 170.
Diphthalic acid, 68, 393.
Diphthalic aldehyde, 392.
Diphthalyl, 66.
Diphthalyl-aldehydic acid, 67.
Dipropargyl, 1215.
Dipseudotolylcarbamide, 912.
Dipyrogallol, 1033.
Disinfectants, saline, 308.
Disinfection, 763.
Dispersion and its anomalies, explanation of, 242.
Dissociation of ammoniacal salts and acetates, 33.
Dissociation, crystalline, 31, 32, 129.
Distillation, fractional, 345, 590.
Disulphobenzoic acid, 506.
Diuramide, diglycollamic, 382.
Dodecavanadate of thallium, 334.
Dolomite, pseudomorph of, after garnet, 857.
Donations to the Library of the Chemical Society (1872—1873), 792.
Drinking waters. See Waters.
Drying chamber with mica walls, 412.
Dualin, 304.
Dulcite, researches on, 160.
Dulcite and mannite, identity of hexyl compounds from, 370.
Dulong and Petit's law, apparent variability of, 589.
Dye, black, for paraffin and other materials for candle-making, 205.
Dye, black, for woollen and semi-woollen goods, 208.
Dye, new fuchsine, for cotton, 208.
Dye, violet, for wool, 208.
Dyeing of feathers, 1069.
Dynamite, 304.
—— effects of, 1068.
—— estimation of nitroglycerin in, 1165.

E.

Earth salts of Bellary (India), 151.
Earth, vegetable, nitrification of, 725.

Earthenware, English glaze for, 1170.
Earths, dissolved, presence of, in alkaline blood, 925.
Eatable earths of Lapland and Southern Persia, 151.
Ebonite cuttings, varnish made from, 308.
Eclogite from Eisbiswald in Styria, 1116.
Eggs of reptiles, chemical constituents of, 924.
Eggs, spontaneous alteration of, 522, 1150.
Ehlite, 107.
Elective attraction, 342.
Electric currents, effects of, on mercurial electrodes immersed in various solutions, 833.
Electric decomposition of carbon monoxide, 744.
Electric discharge, silent, combination of hydrogen with cyanogen under the influence of the, 865.
Electric discharge, silent, production and action of the, 713.
Electric discharge, silent, new researches on the, 1093.
Electric resistance of metals, 832.
Electric resistance of selenium, action of light on the, 998.
Electric and capillary phenomena, relation between, 1094.
Electrical machines, comparison of different, 839.
Electricity, action of, on flames, 839.
—— action of, on flames, liquids, and powders, 1093.
—— action of, on gases, 348.
—— influence of, on mixtures of marsh-gas and carbon dioxide, and of hydrogen and carbon monoxide, 864.
—— active properties acquired by some gases under the influence of the silent discharge of, 29.
—— production of, by mechanical actions 839.
—— of plants, 713.
Electrolyses, water in, is not decomposed by the current, 27.
Electrolysis, application of, to the determination of molecular weights, 26.
Electrolysis of itaconic acid, 377.
Electromagnetic deposition of steel, 204.
Electromagnets, maximum magnetic effect in, 839.
Electromotive force of very thin gas strata, 348.
Electromotive force, voltaic standard of, 472.
Elements, nature of, 132.
Emetine, action of, on the organism, 79.
—— detection of, 94.
Emetine, solubility of, in chloroform, 535.
Enamel for frosted glass-making, preparation of, 1171.
Endosmose of gases through vegetable membranes, 1251.
English glaze for earthenware, 1170.
Epicarbhydric acid, action of acetyl chloride on, 1217.
Epichlorhydrin, constitution of, 1218.
Epichlorhydrinic acid, 1218.
Epidote, chemical formula of, 251.
Erbium, combinations of, 138.
Erbium, spectrum of, 829.
Erythramylum, 395.
Erythrodextrin, 394.
Ethanes, bromonitrated, 611.
Ethene-protocatechuic acid, 1144.
Ethenyl-diamido toluene, 174.
Ethenyl-diamido xylene, 174.
Ethenyl-diamido xylene-urethane, 174.
Ethenyl-toluylene-diamine, 174.
Ethenyl-triamidobenzene, 174.
Ethenyl-xylylene diamine, 174.
Ethenyl-xylylenediamine-urethane, 174.
Ether, vibrations produced in the particles of bodies by the vibrations of the, 242.
Ether, ethylic, action of, on iodides, 365.
—— —— behaviour of, in contact with various substances, 263.
—— —— brominated, 487.
—— —— detection of alcohol and water in, 532.
Ether, silicic, and its derivatives, reduction-products of, 49.
Ether, valeric, 367.
Ethers, combinations of, with titanium chloride, 1015.
Ethers, compound, synaphy of, 587.
Ethers, isopropylic, 367.
Ethers, isosulphocyanic, 881.
Ethers, pyroracemic, 377.
Ethers, sulphocarbonic, 617.
Ethers, sulphuretted chlorocarbonic, 1222.
Ethyl alcohol, compound of, with allyl cyanide, 879.
Ethyl alcohol, influence of, on animal heat, 518.
Ethyl chloride, action of, on sulphuric anhydride, 1216.
Ethyl cyanocarbonate, 381.
Ethyl fumarate, 56.
Ethyl iodide, action of the dry copper-zinc couple on, 446.
Ethyl iodide and alcohol, action of the copper-zinc couple on, 450.
Ethyl iodide and water, action of the copper-zinc couple on, 449.
Ethyl naphthyloxamate, 913.

Ethyl œnanthylate, 1077.
Ethyl orthoformate, reduction of, 48.
Ethyl sulphocyanate, 1224.
Ethyl valerate, normal, 368.
Ethyl valerate, density, boiling point, and rotatory power of, 1017.
Ethyl-acetylene and its identity with crotonylene, 1014.
Ethyl-alizarin, 900.
Ethylamine, crystalline form of platinochloride of, 471.
Ethyl-aniline, new source of, 759.
Ethylate of sodium, action of chlorides on, 866.
Ethylate of sodium, behaviour of, when heated with acetamide, 991.
Ethylate of sodium, constitution of, 44.
Ethylated derivatives of the cinchona alkaloïds, optical properties of, 1180.
Ethyl-benzene, action of bromine on boiling, 1028.
Ethylene, affinity of carbon and hydrogen in, 127.
Ethylene, decomposition of, by the silent electric discharge, 1093.
Ethylene, formation of tartaric acid from, 743.
Ethylene, solution of, in sulphuric acid, 747.
Ethylene and ethylene-bromide, preparation of, 1118.
Ethylene-platinochlorides of ethylamine, aniline, pyridine, and lutidine, crystalline forms of, 471.
Ethyl-glycollic acid, nitril of, 879.
Ethyl-isopropyl-isobutyl-phosphine, 883.
Ethyl-malonic acid, 376.
Ethyloxy-oxalyl chloride, 264.
Eucalytus globulus, leaves of, 403.
Eudiometer, beetle, 292.
Excretin, 919.
Explosions in flour mills, 420.
Explosive bodies, decomposition of, compared with the phenomena of supersaturation, 1103.
Explosives, new class of, which are non-explosive during manufacture and transport, 796.
Extract, determination of, in beer or wort, 95.

F.

Fahl-ore and its twin-formations, 857.
Fat and flesh, results of feeding with, 1047.
Fat of hay, digestibility of, 648.
Fats, determination of the melting and solidifying points of, 237.
Fats in meadow hay, nature of, 648.
Fats, vegetable, new hydrocarbon from, 1215.
Fatty monobasic acids, hydrates of, 371.
Fatty series, nitro-compounds of the, 261, 611.
Feathers, dyeing of, 1069.
Feathers, red colouring of, 423.
Feeding experiments with sophisticated cattle salts, 649.
Feeding experiments with sheep, 519.
Feeding with flesh and fat, results of, 1047.
Fehling's solution, action of crystallisable sugar on, 296.
Fehling's solution, use of the compound of dextroglucose and sodium chloride for the titration of, 265.
Felspar, solvent action of gypsum on, 1202.
Felspar theory, considerations on the, 733.
Felspars, two calcio-sodic, from the Ural, 249.
Felt, dyeing of, with aniline colours, 1176.
Ferment of the liver, 515.
Ferment, saccharifying, of blood, 1245.
Fermentation, memoirs on, 294.
Fermentation, alcoholic, 80.
—— —— by means of *Mucor Mucedo*, 650.
—— —— by beer-yeast, physiological theory of, 405.
—— —— influence of reduced atmospheric pressure on, 973.
Fermentation alcohols, several groups of isomeric bodies derived from the, 258.
Fermentation of fruits, 293.
Fermentation, spontaneous alcoholic and acetic, in the liver, 399.
Ferments belonging to the diastase group, 82.
Ferments, generation of, 82.
Ferments, separation of digesting, 1064.
Ferric chloride, affinity in solution of, 847.
—— —— physiological action of, 398.
—— —— as a test for iodine, 527.
Ferric chromate, basic, 657.
Ferric citrate, iodised albumin with, 512.
Ferric and cuprous oxides, natural compound of, 1107.
Ferric oxide, determination of, by sodium thiosulphate, 1162.
Ferric oxide, reduction of pure anhydrous, by pure carbon *in vacuo*, 1006.
Ferricyanide of potassium, behaviour of certain metals in a solution of, 473.

Ferricyanide of potassium, preparation of, 282, 380.
Ferricyanide of potassium, reduction of, to ferrocyanide by heating with zinc and spongy copper, 548.
Ferrocyanide of erbium, 139.
Ferrocyanide of potassium, behaviour of certain metals to a solution of, 282.
Ferrocyanide of potassium, reactions occurring in the preparation of carbon monoxide from, 497.
Ferrocyanide of yttrium and potassium, 138.
Ferroso-ferric oxides, constitutional formulæ of, 255.
Ferrous chloride, titration of, with potassium permanganate, 531.
Ferrous sulphate, heat evolved in the action of chlorine on, 1095.
Ferrous sulphate precipitated by alcohol, 246.
Ferrum reductum, examination of some samples of, 299.
Fibrin, new researches on the coagulation of, 180.
Fibrin, digestion of, without pepsin, 761.
Field-experiments at Oderbruch, 87.
Filter-paper, acceleration of coagulation by, 186.
Filter-pump, improved form of, 132.
Filters, porous, 952.
Filters for water, of moulded charcoal, 1268.
Filtration, new method of, 1158.
Filtration, siphon apparatus for, 526.
Fire-analysis, 537.
Fire-clay, behaviour of, in contact with iron slag at a high temperature, 1269.
Fire-clays from Carniola, 952.
Fire-works, signal, mixtures for, 1068.
Fisetin, 72.
Fishes, observations on some liquids of the organisms of, 1150.
Fishes, respiration of, 929.
Flame of compressed gases, 590.
Flame, Bessemer, spectrum of, 461.
Flame-test for boric acid, 1055.
Flames, action of electricity on, 1093.
Flasks which have contained resin solutions or essential oils, cleansing of, 1276.
Flavin, 641, 959.
Flesh and fat, results of feeding with, 1047.
Floor-wax, preparation of, 407.
Flour-mills, explosions in, 420.
Flowers, colouring and drying of natural, 307.
Fluorene, a fluorescent hydrocarbon obtained from coal-tar, 1226.
Fluorescence of some solid hydrocarbons in coal-tar and petroleum residues, 590.
Fluorescent relations of anthracene and chrysogen, 235.
Fluorescent relations of certain hydrocarbons found in petroleum distillates, 235.
Fluoride of erbium, 139.
Fluoride of yttrium, 137.
Foods, amount of iron in, 288.
Foods, Voit's criticism of the division of, into plastic and respiratory, 286.
Formaldehyde, compounds of, with aromatic hydrocarbons, 884.
Formate, calcic, production of methyl alcohol by distillation of, 1118.
Formate, isopropylic, 367.
Formate of sodium, action of, on benzoic acid, 1238.
Formic acid, formation and decomposition of, 240.
Formic acid, heat of combustion of, 1099.
Formic acid, synthesis of, 744.
Formochloride of methylene, 1117.
Formyl-carberin, 371.
Fractional distillation, 345.
Frangulin and frangulic acid, 503.
Freezing-points of mixtures of acetic acid and water, 613.
Frogs, breathing of, 1154.
Fruits, fermentation of, 293.
Fuchsine, colour-dispersion of, 236.
Fuchsine, diamond, 208.
Fuchsine dye, new, for cotton, 208.
Fuchsine, preparation of, without arsenic, 422.
Fuel, artificial, from coal-dust, 420.
Fumarate, ethylic, 56.
Fungi, function and transformation of, 404.
Fungi, power of certain substances to prevent the development of, 405.
Fungus, substance extracted from a Chinese (Fouh-ling), 283.
Furfurol, production of, by the action of superheated water upon wood, 162.
Furfuryl alcohol, 626.
Furnace, iron, Khern's, for use with lignite, 98.
Furnace-product containing magnetic iron oxide, 254.
Fusel oil, detection of alcohol in, 1164.
Fusel-oil, detection of, in spirits of wine, 655.
Fusel-oil testing of alcohol for, 532.

G.

Gabbro, analysis of, from Prato in Tuscany, 856.

Galena, analysis of, 652.
Gallotannic acid, pure, 748.
Galvanic polarisation of platinum, 463.
Galvanic reduction of iron under the influence of a powerful electromagnetic solenoïd, 831.
Galvanometers, maximum magnetic effect on, 839.
Galvanometers, resistance of, 839.
Garnet, conversion of, into chlorite, 855.
Garnet into mica, pseudomorphosis of, 356.
Garnets from Salm-Châteaux, Belgium, 1114.
Gas, simple arrangement for the employment of, as a means of obtaining high temperatures, 471.
Gas used for inhalation at Inselbad near Paderborn, 360.
Gas-analysis, new apparatus used in, 936.
Gas-analysis, technical, 651.
Gas-apparatus for heating in laboratories, 540.
Gas-flames, regulation of, for temperatures above the boiling-point of mercury, 129.
Gas-flames, temperature-regulator for, 471.
Gas-generators, 132.
Gas-holder, improved, 36.
Gas-liquors from gas-works, 302.
Gas-strata, electromotive force of very thin, 348.
Gases, action of electricity on, 348.
—— active properties acquired by some, under the influence of the silent discharge of electricity, 29.
—— industrial production of cold by the expansion of permanent, 716.
—— condensation of, on the surface of solid bodies, 468.
—— diffusion of, through porous walls, and the accompanying changes of temperature, 835.
—— enclosed in coal, 483.
—— enclosed in certain lignites, 43.
—— endosmose of, through vegetable membranes, 1251.
—— evolved from the volcano of Nisiros, analyses of, 1212.
—— flames of compressed, 590.
—— internal friction of, 838.
—— in liquids, apparatus for the determination of, 412.
—— molecular rotation of, 838.
—— photo-chemical researches on the use of, as developers, 1169.
—— part played by, in the coagulation of albumin, 1247.
—— in sea-water, 860.
Gases, solution of, in iron, cast-iron, and steel, 729.
—— in Geissler's tubes, spectra of, 242.
—— from the springs of Inselbad (Paderborn), and their application to inhalation, 1212.
—— thermodiffusion of, 834.
—— transpiration of, 468.
Gases of vitriol chambers, estimation of oxygen in, 1159.
Gastric juice of the ray, 1150.
Gelatin, preparation of, 1070.
—— use of, in nutrition, 284.
—— red colouring of, 423.
German silver, manganese as a substitute for nickel in, 1171.
Geysers on the island of San Miguel (Azores), general results of the analysis of, 1012.
Gilding iron by the dry way, simplification of the method of, 418.
Glairin from the springs at Molitg, 1149.
Glass, annealing of, 723.
—— cement for, 97.
—— colouring of, by insolation, 463.
—— composition of various kinds of, 201.
—— devitrification of, 244.
—— production of opacity in, 657.
—— silvering of, 419.
Glass-making, advantageous use of manganese liquors in, 1171.
Glass-making, Glauber's salt in soda used for, 540.
Glass and gypsum, pseudomorphs of, in the form of gooseberries, 740.
Glauber's salt in soda used for glass-making, 538.
Glaze, English, for earthenware, 1170.
Glucinum, compounds of, 1003.
Glucinum-propyl, 871.
Glucose, conversion of cane-sugar into, by the action of light, 490.
Glue, a new, 208, 306.
Glue which resists the action of water, 1072.
Glue, sugar-lime as a solvent for, 306.
Glutamic acid, 512.
Glutin, specific gravity of, 283.
Glyceric acid, decomposition-products of the chloranhydride of, 1020.
Glycerin, action of sodium sulphide on, 868.
—— analysis of, 1165.
—— conversion of, into acetone, 627.
—— solubility of metallic oleates and of calcium sulphate in, 875.
—— as a solvent, 47.
Glycerin derivatives, constitution of, 1217.
Glycerin of the aromatic series, 1139.

Glycidamine, 1121.
Glycocholic acid, estimation of, in bile, 536.
Glycol, dichloronaphthyhydrenic, 1034.
Glycols, preparation of, 1016.
Glycolyl sulpho-urea, 880, 1131.
Gneiss, solvent action of gypsum on, 1202.
Gold assays, 295.
Gold coinage, alloys employed for, 1067.
Gold, molecular colour of, 342.
Gold monochloride, 245.
Gold, separation of, from silver chloride, 728.
Gold from Vancouver Island and from West Africa, 1108.
Golden Seal (*Hydrastis Canadensis*) and its alkaloïds, 919.
Gold-purple, 604.
Grain, methods of analysing, 1061.
Grain, function of sulphurous acid when used for the saccharification and alcoholisation of, 304.
Granite, solvent action of gypsum on, 1202.
Grapes, chemical researches on the ripening of, 402.
Grape-sugar, detection of, 534.
Grape-sugar, detection of, in presence of dextrin and other allied bodies, 1163.
Grape-sugar, crystallised, preparation of, 370.
Graphite, 732, 845.
Graphite, behaviour of, at high temperatures, 1195.
Greenstone, 732.
Green-tinted envelopes, detection of arsenic in, 943.
Grenade, a new dye-stuff, 208.
Grove's battery, improved form of, 590.
Guadalcazarite, 42.
Guaiacum, value of tincture of, as a test for ozone, 938.
Guanidine, methyl-, 75.
Guano, composition of various kinds of, 1257.
Guano, occurrence of avic acid in, 1052.
Guanos, composition and alteration of, 609.
Guanos, estimation of phosphoric acid in, 1160.
Gum, prevention of mould in solution of, 100.
Gum-arabic, determination of, 534.
Gun-cotton, preparation of red quick matches from, 956.
Gun-cotton, newly-discovered property of, 658.
Gun-cotton and collodion preparations, 540.
Gunpowder, method of comparing different kinds of, 1260.
Gypsum, power of, to facilitate the decomposition of complex rocks, and thereby increase the fertility of soils, 1202.
Gypsum and glass, pseudomorphs of, in the form of gooseberries, 740.

H.

Hæmoglobin, action of quinine on, 288.
Hæmoglobin, estimation of, in blood, 1245.
Hæmoglobin, genuine and crystallised, 185.
Hæmoglobin, spectroscopic detection of, and occurrence of, in the animal organism, 398.
Hæmoglobin, influence of, on the coagulation of plasma, 185.
Hæmoglobin, variations of, in the zoological series, 1245.
Harrogate spas, monthly analytical examinations of the, 1089.
Hay, nature and digestibility of the fats in, 648.
Heat, action of, on solutions of hydrated salts, 34.
—— conduction of, in crystallised bodies, 287.
—— developed in the animal body, 287.
—— developed in the reactions of chlorine and its compounds, 1094.
—— developed in the reaction between hydracids and water, 242.
—— developed by friction of liquids against solids, 1100.
—— developed in oxidation by various oxidizing agents, 1187.
—— developed during the formation of the potassium salts of acetic and trichloracetic acid, 1100.
—— developed in the reactions between water and the hydrates of potassium and sodium, 999.
Heat, animal, influence of alcohol on, 518.
Heat of combustion of formic acid, 1099.
Heat, specific, of carbon at high temperatures, 239.
—— —— of methyl alcohol and water, 466.
—— —— of a mixture, and the heat evolved or absorbed in its formation, relations between, 466.
Heat of transformation, 998.
Heat-spectrum of solar light and of the lime light, 349.

Hebronite, 1113.
Heliographic methods, new, 1203.
Hellebore-root, white, constituents of, 905.
Hepatic limestone from Algeria, 482.
Heptanes from petroleum, 319.
Heptyl alcohol, normal, 1081.
Heptylic acid from the hexyl alcohol of Heracleum oil, 55.
Heptylic acid (dinitro-), action of sodium amalgam on, 1019.
Hesperidene, action of hydriodic acid on, 562.
—— action of nitric acid on, 556.
—— oxidation of, by chromic acid, 553.
—— refractive power of, 972.
Hesperidene dibromide, cymene from, 691.
Hexbromethane, formation of, from mucobromic acid, 625.
Hexethyl-disilicic ether, 747.
Hexoxydiphenyl, 1033.
Hexvanadate of thallium, 326.
Hexyl alcohol of Heracleum oil, heptylic acid from, 55.
Hexyl compounds from mannite and dulcite, identity of, 370.
Homologous organic compounds, boiling points of, 257.
Hop-extract, Griessmayer's, 659.
Hornblende, 735.
Humite, chemical composition of, 142.
Hydracids, constitution of, in solution, and their inverse reactions, 835.
Hydracids, reciprocal displacement of, 1192.
Hydracids and water, heat disengaged in the reaction between, 715.
Hydracrylic acid, 490.
Hydrastis Canadensis, or Golden Seal, and its alkaloïds, 919.
Hydrate of glucinum, 1003.
Hydrates of barium, strontium, and calcium, heat of formation of, 1097.
Hydrates of the fatty monobasic acids, 371.
Hydrates of potassium and sodium and water, heat disengaged in the reactions between, 999.
Hydrated salts, action of heat on solutions of, 34.
Hydraulic cements, basic calcium carbonate in, 97.
Hydrazotoluene, 1028.
Hydrobenzoïn, action of acetyl chloride on, 1139.
Hydrobenzoïn, action of phosphoric chloride on, 1140.
Hydrobenzoïn, constitution of, 1037.
Hydrobenzoïn chloride, action of alcoholic potash on, 1140.
Hydrocarbon from diphenylene ketone, 755.
Hydrocarbon, new, from vegetable fats, 1215.
Hydrocarbon from coal-tar oil, isomeric with anthracene, 177.
Hydrocarbons, improvements in obtaining, 956.
—— new mode of forming, 363.
—— new method of testing the inflammability of, 532.
—— fluorescent relations of certain, found in petroleum distillates, 235.
—— action of platinum and palladium on, 1214.
—— polymerisation of, 873.
Hydrocarbons isomeric with anthracene, 175, 176, 177.
Hydrocarbons, aromatic, compounds of, with aldehydes, 501.
Hydrocarbons, aromatic, compounds of, with aldehydes and alcohols, 884.
Hydrocarbons, aromatic, action of benzyl chloride on, 272.
Hydrocarbons, aromatic, action of the chlorides of aromatic acids on, 1233.
Hydrocarbons, aromatic, action of iodine on, 498.
Hydrocarbons, aromatic, new series of, 631.
Hydrocarbons, aromatic, action of zinc on a mixture of, with aromatic halogen-compounds, 632.
Hydrocarbons from nutmeg-oil, 550.
Hydrocarbons from orange-peel oil, action of chromic acid on, 553.
Hydrocarbons from orange-peel oil, action of nitric acid on, 536.
Hydrocarbons, propylenic, 486.
Hydrochlorazoxybenzene, 167.
Hydrochloric acid, testing of, for arsenic, 943.
—— —— observations on Berthelot's researches on, 1096.
—— —— action of, on codeine, 916.
—— —— preparation of pure, 132.
—— —— purification of, 840.
—— —— and oxygen, mutual action of, on certain metallic bodies, in producing a continuous stream of chlorine (Deacon's process), 1103.
Hydrocœrulignone, 11, 1033.
Hydrocyanic acid, formation and detection of, 93.
—— —— detection of, in cases of poisoning, 193.
—— —— polymeride of, 628.
Hydrocyanides of alkaloïds, 497.
Hydrodibromazobenzene, 384.
Hydrodichlorazobenzene, 169.
Hydrofluoric acid, arsenical, 528.

Hydrogen, action of nascent, on bitter almond oil, 1139.
Hydrogen, action of nascent, on cinchona alkaloïds in acid solutions, 1178.
Hydrogen, affinity of, for the non-metallic elements, 126, 838.
Hydrogen, compressibility of, at high temperatures, 239.
Hydrogen, combination of, with cyanogen, under the influence of the silent electric discharge, 865.
Hydrogen occluded by palladium, condition of, as indicated by the specific heat of the charged metal, 112.
Hydrogen, refraction-equivalent of, 460.
Hydrogen and carbon monoxide, influence of electricity on, 864.
Hydrogen and chlorine, combination of, in the absence of light, 724.
Hydrogen atoms, changes in the position of, on the carbon-skeleton of organic bodies, 152.
Hydrogen dioxide, 242.
Hydrogen dioxide, decomposition of, by filter-paper, ptyalin, and pepsin, 186.
Hydrogen phosphide, spontaneously inflammable, from phosphonium iodide, 601.
Hydrogen sulphide, new process for the preparation of, as a laboratory agent, 840.
Hydrometers, tube-, new application of, 131.
Hydromuconic acid, 622.
Hydronaphthaquinone, 210.
Hydropyromellitic acid, 755.
Hydroquinone and analogous substances, notes on, 386.
Hydrosantonin, 1232.
Hydrotachylyte and basalt of Rossdorf, Darmstadt, 1211.
Hygrophilite, a new mineral of the pirite group, 1207.
Hyoscyamine, 641.
Hyoscyamine, solubility of, in chloroform, 535.
Hypochlorites, preparation of pure, 96.
Hypochlorous acid, heat of formation of, 1190.
Hypophosphites, 1.
Hypophosphites, modes of decomposition of, 12.
Hypophosphites, reducing power of, 13.
Hyposulphate of glucinum, 1004.
Hyposulphite of sodium, estimation of aniline dyes by means of, 1263.
Hyposulphite of sodium, volumetric estimation of oxygen with, 936.

I.

Igasuric acid, 904.
Imidhydroxyl-anthraquinone, 390.
India-rubber tubes, effect of, on the illuminating power of coal-gas, 300.
Indican, origin of, in the urine, 516.
Indigo, economy of, in printing blues, 421.
—— solvents for, 179.
—— testing of, 96.
Indium, new compounds of, 846.
Induction spark, condensed discharge of the, 830.
Indulin ink, 959.
Injuries received by thermometers during transport, 413.
Ink, prevention of mould in, 100.
Inorganic chemistry, systematization of, 591.
Insolation, colouring of glass by, 463.
Iodate of erbium, 139.
Iodate of glucinum, 1004.
Iodate of potassium, behaviour of, in the animal organism, 398.
Iodic acid, action of, on pyrogallic acid, 1239.
—— —— estimation of, by reduction with zinc and copper in presence of water, 548.
—— —— heat of formation of, 1189.
Iodide of amyl, action of copper-zinc couple on, 678.
Iodide of ethyl, action of copper-zinc couple on, 445.
Iodide of methyl, action of copper-zinc couple on, 678.
Iodide of nitrogen, action of, on starch, 47.
Iodide of potassium, detection and estimation of bromide of potassium in, 527, 528.
—— —— testing of, for iodate, 191.
Iodide of stannopropyl 366.
Iodides, action of ether on, 365.
Iodides, preparation of, 1104.
Iodides of methyl and butyl, preparation of, 1014.
Iodides of propyl, action of the copper-zinc couple on, 961.
Iodine, action of chromium trioxide on, 141.
Iodine, action of, on some hydrocarbons of the aromatic series, 498.
Iodine, affinity of hydrogen for, 126.
Iodine, affinity of, for oxygen, 1188.
Iodine, estimation of, by Carius's method, 527.
Iodine, estimation of, in presence of chlorine or bromine, 939.
Iodine, ferric chloride as a test for, 527.

Iodine, mineral springs of Java containing, 741.
Iodine, testing of bromine for, 528.
Iodine-green on linen, 442.
Iodine monochloride, 815.
Iodine substitution-products, 761.
Iodine and bromine in apatite, 357.
Iodine and sulphur, behaviour of, to mercury, 476.
Iodized albumin, 512.
Iodobenzene-parasulphonic acid, 757.
Iodorcin, 275.
Iona pebbles, 19.
Iron, amount of, in the blood and in foods, 288.
Iron, decarbonisation of, 98.
Iron, direct preparation of, from its ores, 951, 1171.
Iron, distribution of, in the constituents of the blood, 398.
Iron, estimation of oxygen in decarbonised Bessemer, before addition of Spiegeleisen, 298.
Iron, galvanic reduction of, under the influence of a powerful electro-magnetic solenoïd, 831.
Iron highly impregnated with silicon, conditions for the manufacture of, in blast furnaces, 1067.
Iron, impurities in, produced by precipitation process, 670.
Iron, influence of acids on, 848.
Iron, mineral waters containing, 741.
Iron, simplification of the method of gilding by the dry way, 418.
Iron, solution of gases in, 729.
Iron, yield of, in cascade furnace, 670.
Iron, yield of, by precipitation process, 669.
Iron, yield of, in rotating furnace, 669.
Iron, bar-, preparation of, from pig containing phosphorus, 98.
Iron, cast, action of a sulphur-spring on, 1106.
Iron furnace, Khern's, for use with lignite, 98.
Iron liquor for calico-printing, 1272.
Iron, malleable, some points in the manufacture of, 202.
Iron, meteoric, from Cape Colony, 610.
Iron, meteoric, found in El Dorado Co., California, 255.
Iron ore, magnetic, 735.
Iron ore, titaniferous, 735.
Iron oxide, magnetic, furnace-product containing, 254.
Iron, pig-, analysis of, 408.
Iron salts, action of, on pyrogallic acid, 1259.
Iron and carbon, action of, on carbonic anhydride at a red heat, 37.
Iron and steel, smelting of, 661.
Isobutyl alcohol, commercial and pure, 1217.
Isobutyl butyrates, 374.
Isobutyl ethers, carbonic and sulphocarbonic, 266.
Isobutyl trisulphocarbonate, 873.
Isobutylene, action of hydrochloric acid on, 43.
Isobutyl-phosphine, 882.
Isobutylphosphinic acid, 884.
Isobutyl-sulphethyl-dioxycarbonate, 872.
Isobutyl-sulphonic acid, 267.
Isobutyric acid, 55, 374, 615.
Isobutyric aldehyde, action of chlorine on, 877.
Isobutyric aldehyde, commercial and pure, 1217.
Isobutyric aldehyde, polymeric modifications of, 378.
Isocholesterin, 1219.
Isocrotyl ether, 747.
Isodibromadipic acid, 623.
Isodinitrobenzophenone, 171.
Isodinitro-diphenylmethane, 170.
Isoheptyl alcohol from ethyl-amyl, 318.
Isohydrobenzoïn, action of acetyl chloride on, 1140.
Isohydrobenzoïn, action of phosphoric chloride on, 1140.
Isohydropyromellitic acid, 755.
Isomeric bodies, groups of, derived from the fermentation alcohols, 258.
Isomorphism of the anhydrous sulphates of the alkalis and alkaline earths, 247.
Isomorphous bodies, crystallographico-optical relations of, 994.
Isomorphous crystals, structure of, 130.
Isonitropropane, 261, 262.
Isophthalate, methylic, 756.
Isophthalic acid, formation of, by the action of sodium formate on benzoic acid, 1238.
Isophthalic acid, formation of, by oxidation of colophony, 889.
Isopropyl ethers, 367.
Isopropyl iodide, action of the dry copper-zinc couple on, 961.
Isopropyl iodide and alcohol, action of the copper-zinc couple on, 965.
Isopropyl iodide and water, action of the copper-zinc couple on, 964.
Isopropyl iodide, action of zinc on, 965.
Isopropyl-isobutyl phosphine, 883.
Isopropyl-phosphine, 882.
Isopropyl-phosphinic acid, 884.
Isopurpurates, 75.
Isopyromucic acid, 625.
Isopyrum thalictroïdes, alkaloïds from, 511.
Isosulphocyanic ethers, 881.

Isoxylene, action of benzyl chloride on, 272.
Isoxylene, dinitro-, 888.
Isuretine, a base isomeric with urea, 629.
Isuretine, crystalline form of, 586.
Itaconic acid, electrolysis of, 377.
Itaconic acid, reaction of, with ferric chloride, 377.
Itamalic acid, monochlorinated, 1221.
Ivory, red colouring of, 423.

J.

Jeffersonite, 479.
Jervic acid, salts of, 906.
Jervic acid from white hellebore root, 905.
Juice, determination of the amount of, in beet, by means of polarisation, 1262.
Juice in the sugar factory, Vivien's process for estimating the alkalinity of, 1060.
Julianite, 149.
Juniper-berries, examination of, 1051.

K.

Kaluszite, identity of, with syngenite, 852.
Karaka tree, isolation of the bitter substance of the nut of, 933.
Ketone prepared by oxidation of secondary alcohol derived from ethyl-amyl, 316.
Ketones, action of ammonia and its derivatives upon, in presence of dehydrating agents, 1036.
Ketones, decomposition of, by heat, 754.
Ketones, formation and decomposition of, 753.
Ketones, new method of obtaining, 901.
Ketones, oxidation of, 1037.
Ketones, synthesis of, 635.
Ketones, aromatic, synthesis of, 1035.
Ketones, isomeric, formed by the action of β-naphthyl chloride on naphthalene, 1233.
Ketonic acids, formation of, 496.
Kjerulfin, a new mineral from Bamle in Norway, 1206.
Kieserite, its properties and applications, 416,
Koumiss, 76.
Krantzite, identity of so-called "unripe amber" with, 483.

L.

Laboratory apparatus, some forms of, 1194.
Laboratory vessels, cleansing of, 1276.
Lactate, isopropylic, 367.
Lactates, supersaturated solutions of, 165.
Lactic acid, anhydrides of, 57.
Lactic acid, preparation of propionic acid from, 54.
Lactic or butyric ferment, presence of, in yeast, 975.
Lactophosphates, 494.
Lacturamic acid, 380.
Lactyl urea, 380.
Lævotartaric acid, formation of, from ethylene, 743.
Lakes, preparation of alcoholic, 960.
Lambs, effect of artificial addition of phosphates to the food of, 1153.
Lamp flames, temperature regulator for, 471.
Lanarkite from Leadhills, 480.
Land-plants, respiration of, 1049.
Lanthanum, atomic weight of, 1004.
Lavas of the last eruption of Santonin, analysis of, 477.
Lead, action of water on, 1006.
Lead: its impurities and their influence on the technical use of the metal, 846.
Lead and bismuth alloys, spontaneous disintegration of, 603.
Lead chamber, determination of oxygen in the gases of the, 935.
Lead chlorides, solubility of, 575.
Lead chromate, action of nitric acid on, 1005.
Lead hypophosphite, 10.
Lead œnanthylate, 1079.
Lead ores, new method of assaying, 1055.
Lead oxide, action of heated, on organic bodies, 1135.
Lead pyrogallate, 702.
Lead-salts, 702.
Lead-salts, action of acetates on, 575.
Lead sulphate, estimation of, in commercial lead chromate, 1056.
Leadhillite, new locality of, 481.
Leadhillite and Maxite, 1112.
Leather-dressing, use of phenol in, 206.
Leaves, autumnal colouring of, 1049.
Leaves, light emitted by, 647.
Legumin, specific gravity of, 283.
Leidenfrost's phenomenon, 242.
Lemon oil, 1226.
Lemon oil, discrimination of pressed and distilled, 1058.
Lemon tree, composition of the ash of the leaves and fruit of the, 402.

Leucaurin, 439.
Leucite, crystalline system of, 1007.
—— outcasts of, from Vesuvius, 146.
Library of the Chemical Society, donations to the (1872-73), 793.
Liebfrauensee of Kissingen, 359.
Life, influence of changes in barometric pressure on the phenomena of, 641, 762, 1249.
Life, vegetable, influence of barometric pressure on the phenomena of, 1250.
Light, production of, by atomic movements, 341.
Light, influence of coloured, on assimilation by plants, 292.
Light of various colours, influence of, on the spectrum of chlorophyll, 713.
Light, action of, on the electrical resistance of selenium, 998.
Light emitted by leaves, 647.
Light of phosphorescent uranium compounds, analysis of, 25.
Light, reflection of, from transparent bodies and from metals, 590.
Lignites, gases enclosed in, 43.
Lime, products of the distillation of sugar with, 490.
Lime, magnesia and phosphoric acid, quick method of estimating, 294.
Limestone of Great Barrington, Massachusetts, 257.
Limestone, hepatic, from Algeria, 482.
Lime-uranite in the phosphorite of Carceres, 1110.
Linen goods, printing of, 1274.
Linseed-cake, composition and ingredients of, 767.
Linseed-oil, bleaching of, 100.
Liquid films, supposed action of, on supersaturated solutions, 720.
Liquids, action of electricity on, 1094.
Liquids of feeble surface-tension, supposed action of, on liquids of strong surface-tension, 722.
Liquids, easy and exact method of determining the specific gravity of, 577.
Lithiophorite, 149.
Lithium hypophosphite, 3.
Lithofracteur, 304.
Lithurate of magnesium, 398.
Litmus-paper, note on, 196.
Liver ferment, 515.
Logronite, formation of, 358.
Low temperatures, action of, on wines and spirits, 1173.
Lubricating oils, especially rosin-oil, 1175.
Lucern, digestibility of, in the fresh state and as hay, 1156.
Luminous organs of the Mexican cucúyos, analysis of, 924.
Lupine, yellow, constituents of the seed of, 650.
Luteocobaltic chloride, crystalline form of, 585.
Lutidine, crystalline form of ethylene-platinochloride of, 471.

M.

Magnesia, precipitation of, 944.
Magnesia, lime, and phosphoric acid, quick method of estimating, 294.
Magnesium carbonate, action of, on calcium sulphate in presence of common salt, 475.
Magnesium hypophosphite, 9.
Magnesium lithurate, 398.
Magnesium oxychloride, 136.
Magnesium sulphates, cobaltiferous, 1114.
Magnetic iron oxide, furnace-product containing, 254.
Mahanuddy, analysis of the water of the, 229.
Malachite, conversion of, into azurite, 1111.
Maleic acid, transformation of succinic acid into, 1127.
Malobiuric acid, 283.
Mandelic acid, preparation of, 1038.
Manganese, estimation of small quantities of, 531.
Manganese, estimation of, by weight, 408, 944.
Manganese, estimation of, in soils and vegetables, 193.
Manganese in steel, 204.
Manganese, colorimetric method for the estimation of, in iron ores, cast iron, and steel, 407.
Manganese as a substitute for nickel in German silver, 1171.
Manganese hypophosphite, 9.
Manganese-liquors, advantageous use of, in glass making, 1171.
Manganese silico-aluminate containing vanadium, 355.
Manganese of Spiegeleisen, use of, in the manufacture of steel, 664.
Manganophyll, 150.
Manganous oxide, preparation of pure, 355.
Mannite and its derivatives, 1123.
Mannite, neutral compounds derived from, 160, 747.
Mannite and dulcite, identity of hexyl compounds from, 370.
Manure, utilisation of waste-products for, 1256.
Manures, effect of, on the alkaloïdal yield of cinchonas, 523.

Manures, effect of various, on different species of plants, 522.
Manures, effect of various, on the growth of sugar-beet, 1254.
Manures, estimation of the total nitrogen in, 1161.
Manures, influence of, on weeds, 934.
Marsh-gas, affinity of carbon and hydrogen in, 127.
Marsh-gas, synthesis of, 744.
Marsh-gas and carbon dioxide, influence of electricity on mixtures of, 864.
Maxite, chemical composition of, 41.
Maxite and leadhillite, 1112.
Maxite, probable identity of, with leadhillite, 481.
Meat-flour from Fray-Bentos, 1275.
Mechanical coefficient of aliments, determination of the, 1249.
Meconate of quinine, 1148.
Mellitic acid, 755.
Melting points, determination of, 30.
Melting points of fats, 237.
Membranes, vegetable, endosmose of gases through, 1251.
Mercaptan, perchlorinated methylic, 262, 263.
Mercaptan, silicic, 53.
Mercurial electrodes immersed in various solutions, effects of electric currents on, 833.
Mercuric chloride, conversion of, into cyanide by means of potassium cyanide, 567.
Mercuric oxide, decomposition (dissociation) of, by heat, 603.
Mercurous chloride, heat evolved in the action of chlorine on, 1095.
Mercurous iodide, crystalline, 1105.
Mercury, behaviour of sulphur and iodine towards, 476.
Mercury, decomposition of red oxide of, by heat (dissociation), 1098.
Mercury estimation, new process for, by means of potassium cyanide, 565.
Mercury, oxidation of, 476.
Mercury calorimeter, 132, 838.
Mercury-propyl, 366.
Mercury-salts, 565.
Mercury-salts, electrolytic decomposition of, 568.
Mercury and morphine, oleate of, 510.
Mesaconic acid, electrolysis of, 1221.
Mesaconic acid, reaction of, with ferric chloride, 377.
Mesocamphoric acid, 1038.
Metachlorortho-oxybenzoic acid, 756.
Metachlorotoluene-sulphonates, 1136.
Metadiamidobenzene, preparation of, 1146.
Metallic deposits, influence of, on zinc, in presence of acids and alkalis, 1203.
Metallic surfaces, white paint for, 205.
Metallurgic products, analysis of various, 1261.
Metals, action of phosphorus on alkaline solutions of, 244.
—— behaviour of certain, in a solution of potassium ferricyanide, 473.
—— detection of, in organic mixtures, 1166.
—— electric resistance of, 832.
—— extraction of precious, from copper pyrates, 97.
—— molecular colours of, 342.
—— spectra of, 461.
Metanitrobenzoic acid, 637.
Metaphosphates, production of, by decomposition of hypophosphites, 12.
Metatoluic acid, 276.
Metavanadate of thallium, 334.
Metavanadic acid, 605.
Meteoric iron. See Iron.
Meteorite from Bandong, Java, 357.
Meteorite of Ibbenbühren, Westphalia, 255.
Meteorite from the Sierra de Chaco, lithological analysis of, 358.
Meteorites, black coating of certain, compared with the crusts produced upon terrestrial rocks by atmospheric agency, 141.
Methintricarbonic acid, 362.
Methyl alcohol, production of, by distillation of dry calcium formate, 1118.
Methyl alcohol and water, specific heat and other physical characters of mixtures of, 466.
Methyl chloracetate, 1117.
Methyl iodide, preparation of, 1014.
Methyl iodide and water or alcohol, action of copper-zinc couple on, 682.
Methyl valerate, density, boiling point, and rotatory power of, 1017.
Methyl-alizarin, 900.
Methylamine, formation of, by the action of heat on morphine derivatives, 1085.
Methylamine, new mode of formation of, 498.
Methyl-amyl carbinol, 319.
Methylaniline, new sources of, 759.
Methylaniline green, 1242.
Methylene acetochloride, 1117.
Methylene formochloride, 1117.
Methyl-ether, silicic, action of zinc-ethyl on, 488.
Methyl-ethyl-isopropylmethane, ketone derived from, 322.
Methyl-ethyl-isopropyl-isobutyl-phosphonium iodide, 883.
Methyl-green, 1272.
Methyl-guanidine, 75.
Methyl-isopropyl-phosphine, 883.

Methyl-mercaptan, perchlorinated, 262, 263.
Methylphosphinic chloride, 884.
Methyl-tri-isobutyl-phosphonium iodide, 883.
Mica spherules from Hermannschlag in Moravia, 1009.
Micromineralogy, contributions to, 257.
Microzymes, transformation of, into bacteria in the alimentary canal, 1048.
Milk, action of mustard-oil on, 76.
Milk, alcohol and acetic acid normally present in, as products of the functions of microzymes, 763.
Milk, analysis of, 537.
Milk and other animal fluids, reaction of, 188.
Milk, boric acid as a preservative of, 100.
Milk, composition of human, 925.
Milk, contributions to the physiological chemistry of, 187.
Milk, normal microzymes of, as the cause of the spontaneous coagulation, and of the alcoholic, acetic, and lactic fermentation of that liquid, 927.
Milk, proportion of phosphoric acid to nitrogen in, 518.
Milk, reaction of, with litmus, 1048.
Milk-sugar, action of potassium permanganate on, 46.
Milk-sugar, detection of, 534.
Miloschin, 853.
Mineral arsenates and phosphates, 101.
Mineral springs of Java containing iodine, 741.
Mineral waters. See Waters.
Minerals, the alkalinity or acidity of certain, as indicated by their reaction with test-paper, 1159.
Minerals, on some Belgian, 1114.
Minerals enclosed in volcanic rocks, remarks on, 739.
Minerals, new method of proximate analysis of, 477.
Mixtures, relations between the specific heat of, and the heat evolved or absorbed in their formation, 466.
Modular properties of refractive powers in saline solutions, 460.
Molasses, recovery of sugar from, by alcohol, 99.
Molasses, Sebor's method of getting sugar from, 1276.
Molecular attraction in capillary spaces, phenomena produced by, 1185.
Molecular colours of the metals, 342.
Molecular weights, application of electrolysis to the determination of, 26.
Molybdate of ammonium, 364.
Molybdate of glucinum, 1004.
Molybdic acid, separation of phosphoric acid from, 1260.
Molybdic acid, use of, in colouring silk blue, 306.
Moniodoresorcin, 275.
Monobromacetyl bromide, action of, on zinc methide and zinc ethide, 48.
Monobromacrylic acid from β-dibromopropionic acid, 1220.
Monobromallyl oxide, 1123.
Monobromobenzene, 886.
Monobromobenzene-sulphonic acids, 1143.
Monobromonitro-ethane, 611.
Monocalcic phosphate, hygroscopic character of, 1201.
Monochloracetal, 1217.
Monochloracetone, 160, 379.
Monochlorethylene chloride, action of, on sodium ethylate, 868.
Monochloride of iodine, 815.
Monochloritamalic acid, 1221.
Monochloromannitan, 161.
Monochlorobenzene, 886.
Monochlorosulphuric acid, 841.
α-Mononitronaphthalene, 1232.
Mononitro-naphthoic acid, reduction of, 391.
Monosulphoxy-azobenzolic acid, derivatives of, 1027.
Monoxyanthraquinone, 275.
Monoxyazobenzene, derivatives of, 1027.
Montebrasite, on the later, of Des Cloizeaux (hebronite), 1113.
Montebrasite and amblygonite, crystalline forms and optical properties of, 481.
Mordanting woollens with alum, 206.
Morphine, action of hydrochloric acid on, 215.
Morphine, action of sulphuric acid on, 210.
Morphine, action of zinc chloride on, 211.
Morphine, detection of, in quinine, 535.
Morphine, insolubility of, in chloroform, 535.
Morphine derivatives, action of heat on, 1085.
Morphine derivatives, on some oxidation and decomposition products of, 1082.
Morphine derivatives, formation of pyridine and methylamine by the action of heat on, 1085.
Morphine derivatives, action of silver nitrate and nitric acid on, 1087.
Morphine polymerides and their derivatives, 211.
Morphine polymerides, physiological action of, 224.

Morphine and its polymerides, table of derivatives of, 228.
Morphine and mercury, oleate of, 510.
Mould, prevention of, in gum, ink, and starch-paste, 100.
Mucic acid, 621.
Mucic acid, derivatives of, 163.
Mucobromic acid, formation of, and action of bromine on, 625.
Muconic acid, 623.
Murexide, dyeing with, 75.
Muscles, some chemical reactions of active and inactive, 921.
Muscular tissue, nutrition of, in health, 77, 186.
Muscular tissue, nutrition of, when affected by disease from phthisis, 186.
Mushrooms, saccharine matter contained in, 759.
Mustard-oil, action of, on milk, 76.
Mustard-oil, detection of carbon sulphide in, 1054.
Mustard-oils. See Sulphocarbimides, 758.
Mustard-oils and cyanides, aromatic, mutual convertibility of, 908,
Mycoderma vini, growth of, in a saccharine liquid, 83.
Myristicol, action of phosphorus pentachloride on, 687.
—— action of zinc chloride on, 689.
—— composition and properties of, 550.
—— refractive power of, 972.

N.

Naphthalene, compounds of, 891.
——derivatives of, 1138.
—— isomeric *α*- and *β*-derivatives of, 1232.
—— synthesis of, 632.
Naphthalene-potassium, action of ethyl bromide on, 382.
Naphthalene tetrachloride, derivatives of, 69, 1034.
Naphthalenes, trinitro-, 69.
Naphthalic acid and acenaphthene, 632.
Naphthanes, nitro-, 174.
Naphthoic acid, mononitro-, reduction of, 891.
Naphthoquinone, formation of, by direct oxidation of naphthalene, 209.
Naphthaquinone, formation of, by oxidation of amidacetonaphthalide, 1233.
Naphthylacetamide, 1040.
Naphthylamine, acid derivatives of, 1040.
—— action of benzyl chloride on, 1147.
—— action of ethyl oxalate on, 913.
Naphthylchloracetamide, 1040.
Naphthyloxamic acid, 913.
Naphthyl-phenyl ketone, formed by the action of benzoyl chloride on naphthalene, 1233.
Naphthylphenyl ketones, 1035.
Narceine, solubility of, in chloroform, 535.
Narceine hydrochloride, 510.
Narcotine, solubility of, in chloroform, 535.
Nefediewite, a new mineral from Nertschinsk, 1210.
Nepheline crystallised in druses, 251.
Negatives, reproduction and inversion of, 1070.
Nessler test, note on the, 1055.
Neurine, decomposition of, 630.
Nickel, electromagnetic deposition of, 204.
Nickel, manganese a substitute for, in German silver, 1171.
Nickel, separation of, from zinc, 1261.
Nickel hypophosphite, 11.
Nickel ores, analysis of, 1261.
Nicotine, 508.
Nicotine in tobacco-smoke, 760.
Nicotine, solubility of, in chloroform, 535.
Nim-tree (*Azadirachta indica*), chemical examination of the bark of, 1157.
Nitracetamide - compounds, reduction-products of, 173.
α-Nitracetonaphthalide, 1232.
Nitramido-dinaphthylimide, 1232.
Nitranisols, decomposition of, by ammonia, 280.
Nitrate of ammonia, action of gaseous ammonia on, 1201.
Nitrate of ammonia, union of, with ammonia, 598.
Nitrate of erbium, 139.
Nitrate of silver, action of, on cane-sugar, 46.
Nitrate of yttrium, 137.
Nitrates, action of acetic chloride on, 683.
Nitrates, commercial analysis of, 530.
Nitrates in soils, 1198.
Nitrates of calcium, potassium, and sodium, reaction of oxalic acid with, 79.
Nitrates and nitrites, production of ammonia from, by the action of zinc and spongy copper, 545.
β-Nitrazoxytoluene, 1027.
Nitric acid, action of, on lead chromate, 1005.
—— —— detection of, in phosphoric acid, 940.
—— —— diphenylamine as a test for, 91.
—— —— estimation of, 91, 529.

Nitric acid, estimation of, by conversion into ammonia, 541.
—— —— estimation of, in well-waters by means of indigo, 90, 1054.
—— —— separation of, from its salts in the plant, 80.
—— —— sub-hydrate of, 173.
Nitric acid and silver nitrate, action of, on certain morphine and codeine derivatives, 1087.
Nitric oxide, expulsion of, from blood, 397.
Nitrification of vegetable earth, 725.
Nitril of ethyl-glycollic acid, 879.
Nitrils, aromatic, action of potassium sulphydrate on, 1241.
Nitrils, preparation of, 879.
Nitrite, indications of a, in saliva, 536.
Nitrites, action of acetic chloride on, 683.
Nitro-amidostilbene, 890.
Nitroanthracene and its derivatives, 1233.
Nitro-anthraquinone, 389.
β-Nitro-azotoluenes, 1027.
Nitrobromophenols, 751.
Nitrochrysin, 1237.
Nitro-compounds, chlorinated, action of sodium on, 168.
Nitro-compounds of the fatty series, 261, 611.
Nitrodibromobenzene-sulphonic acid, 1039.
Nitro-diphenylmethanes, 170.
Nitro-ethane, nitro-methane, and nitro-propane, reactions of the heavy metals with the sodium-compounds of, 262.
Nitro-ethyl-methyl ketone, 261.
Nitrogen, action of charcoal on organic, 14.
—— affinity of hydrogen for, 126.
—— estimation of, in albuminoïds, 1063.
—— estimation of, in organic bodies, 532.
—— estimation of total, in manures, 1161.
—— occurrence of, amongst the gaseous products of alcoholic fermentation, 973.
—— proportion of, to phosphoric acid in milk, 518.
—— removal of, from alkaloïds, 1041.
—— spectrum of, 340.
Nitrogen, atmospheric, action of, in vegetation, 1048, 1154.
Nitrogen iodide, action of, on starch, 46.
Nitrogen monoxide, experimental researches on the physiological action of, 1154.
Nitrogenous waste, production of ammonia sulphate from, 1066.
Nitroglycerin, estimation of, in dynamite, 1165.
Nitronaphthalenes, 174.
Nitronaphthylamine, formation of, from α-nitracetonaphthalide, 1232.
Nitrophenol, a new, 903.
Nitrophenols, constitution of, 633.
Nitrophenols, volatile and non-volatile dinitrophenols obtained from, 1031.
Nitrophenolsulphonic acids, 173, 757, 903.
Nitrophthalic acid, 174.
Nitropropane, 366.
Nitropropane, normal, 261.
Nitrosodidenlactamic acid, 269.
Nitrotoluen ,272.
Nitrotoluene, solid and liquid, azo-derivatives of, 1027.
Nitrotoluic acid from cymene, 1227.
Nitrous acid, diphenylamine as a test for, 91.
Nitrous acid, preparation of, 37.
Nitryl chloride, preparation of, by the action of phosphorus oxychloride on certain nitrates, 342.
Nohlite, 479.
Non-metallic elements, affinity of hydrogen for, 126.
Normal propyl alcohol, derivatives of, 1118.
Normal propyl iodide, action of the dry copper-zinc couple on, 966.
Normal propyl iodide, action of the copper-zinc couple on, in presence of water or alcohol, 968.
Nutmeg hydrocarbon, cymene from, 691.
Nutmeg-oil, lowest boiling hydrocarbon of, 555.
Nutmeg-oil, proximate constituents of, 549.
Nutrition of muscular and pulmonary tissue, 77, 186.
Nutrition, use of gelatin in, 284.

O.

Obsidian, causes of the tumefaction of, at high temperatures, 856.
Octapotetramorphine, 214, 918.
Octovanadate of silver, 336.
Octovanadate of sodium, 335.
Octovanadate of thallium, 329.
Œnanthol, action of potash on, 58.
Œnanthylates, metallic, 1078.
Œnanthylic acid, 617.
Œnanthylic acid, history of, 1073.
Œnanthylic acid obtained by oxidation of the alcohol derived from ethyl-amyl, 315.

Œnanthylic acid, preparation of, 1075.
Œnanthylic acid, properties of, 1076.
Oetethyl-tetrasilicic ether, 746.
Oil-baths in the aniline manufacture, 208.
Oil-cake of the cocoa-nut, 87.
Oil of lemon, 1226.
Oil of lemon, discrimination of pressed and distilled, 1058.
Oil of Roman chamomile, 1226.
Oil, volatile, from the fruit of *Pastinaca sativa*, 642.
Oil volatile, of poplar buds, 1237.
Oils, essential. See Oils, Volatile.
Oils, fatty, determination of free acid in, 411.
Oils, fatty, of the vegetable kingdom, properties of, and means of examining and detecting, 945.
Oils, lubricating, especially rosin-oil, 1175.
Oils, volatile, adulteration of, with turpentine oil, and its detection by means of alcohol, 1058.
Oils, volatile, detection of alcohol in, 532.
Oils, volatile, detection of water in, 296.
Old Sulphur Well, Harrogate, monthly analytical examinations of, 1090.
Oleate of mercury and morphine, 510.
Oleates, metallic, solubility of, in glycerin, 875.
Oligoclase from the Ural, 239.
—— from Wilmington, Delaware, 149.
Olive-cakes, composition of, 403.
Olivine and serpentine of Snarum, 607.
Optical saccharometer, 829.
Orange-peel oil, proximate constituents of, 552.
Orcins, contributions to the history of the, 752.
Orcins, iodo-derivatives of the, 275.
Ore-reducing process for the production of cast steel, 661.
Organ-albumin, 285.
Organic acids, action of metallic sulphocyanates on the salts of, 363.
Organic acids, new series of, 72.
Organic bodies, changes in the position of hydrogen-atoms on the carbon-skeleton of, 152.
—— —— circularly polarising, synthesis of, 743.
—— —— action of the copper-zinc couple on, 445.
—— —— action of heated lead oxide on, 1135.
—— —— determination of nitrogen in, 532.
—— —— boiling points of homologous, 257.
Organic bodies, new, and new modes of preparing them, 362.
—— —— preservation of, 763.
Organism, animal, experimental researches on the influence of change in barometric pressure on the, 762.
Ortho-amidophenol hydrochloride, action of aqueous chloride of lime on an aqueous solution of, 280.
Orthochlorotoluene-sulphonic acid, 1136.
Orthoclase, aventurin, 248.
Orthoformate, ethylic, reduction of, 48.
Orthonitrophenolsulphonic acid, 757, 903.
Orthosilicobenzoic ether, 1026.
Orthosilicopropionic ether, 49.
Orthovanadate of thallium, 325.
Oxalate of erbium, 139.
Oxalate ethylic, action of, on naphthylamine, 913.
Oxalate of yttrium, 138.
Oxalic acid, action of, on the nitrates of calcium, potassium, and sodium, 79.
—— —— action of, on polyatomic alcohols, 1219.
—— —— purification of, 376.
Oxalin, 1122.
Oxamide, products obtained by distilling, with sodium ethylate or potassium phenate, 1240.
Oxen, new kind of calculus from, 398.
Oxide, mercuric, decomposition of, by heat, 1098.
Oxidising and reducing agents, experiments on, 1186.
Oxyammonias, 284.
Oxyazobenzene, derivatives of, 1027.
Oxybenzoic acid, formation of, from chloronitrophenone melting at 41°, 72.
Oxychloride of magnesium, 136.
Oxychlorides of silicium, 746.
Oxycymene, 1030.
Oxycymene from camphor, 1228.
Oxydiphenyl, 749.
Oxygen, action of electricity on, 348.
Oxygen, affinity of, for chlorine, bromine, and iodine, 1188.
—— affinity of bromine for, 1096.
—— affinity of hydrogen for, 126.
—— amount of, dissolved in rain and river water, 740.
—— contributions to the theory that it becomes active during slow oxidation, 594.
Oxygen dissolved in water, action of, on reducing agents, 840.
Oxygen, estimation of, in decarbonised Bessemer iron, before addition of Spiegeleisen, 298.
Oxygen, estimation of, in vitriol chamber-gases, 935, 1159.
Oxygen, estimation of free, 88.

Oxygen, refraction-equivalent of, 460.
Oxygen, remarks on Fudakowsky's paper on active, 839.
Oxygen, thermochemical determinations of the affinities of, for sulphur, selenium, and tellurium, 1190.
Oxygen, volumetric estimation of free, 936.
Oxygen and hydrochloric acid, mutual action of, on certain metallic bodies in producing a continuous stream of chlorine (Deacon's process), 1103.
Oxygen-compounds, table of, showing the total amount of oxygen they contain, and the oxygen available for combustion, 798.
Oxyhydromuconic acid, 622.
Oxyisonaphthoic acid, 1138.
Oxylepidene, 489.
Oxymaleic acid, preparation of, 377.
Oxymaleic acid, preparation and properties of, 1021.
α-Oxynaphthoic acid, 1138.
Oxynitrobenzoic acid (β), 178.
Oxynitrodracylic acid, 178.
Oxysulphide of carbon, 350.
Oxytrinitrazoxybenzene, 1028.
Ozobenzene, 610.
Ozone, absorption of, by water, 472.
—— action of, on alcohol, 864.
—— action of, on pyrogallic acid, 1031.
—— application of concentrated, in organic chemistry, 610.
—— behaviour of, to water, 1103.
—— decolorising power of concentrated, 37.
—— detection of, 938.
—— new method of producing, 724.
Ozone and peroxide of hydrogen, 242.

P.

Pachymose, 283.
Paint, permanent, for fire-proofing wood, 307.
Palladium, action of, on hydrocarbons, 1214.
Palladium charged with hydrogen, specific heat of, 112.
Palladium-silver sulphopalladate, 1197.
Palmitic and stearic acids, Bock's process for producing, 658.
Papaverine, solubility of, in chloroform, 535.
Paper, method of rendering wood and other fibrous substances suitable for pulp to be used in the manufacture of, 1069.
Paper, detection of arsenic in, 943.
Paper and paperhangings, detection of arsenical colours on, 1057.
Papers read before the Chemical Society (Session 1872-73), 784,
Paper-pulp, conversion of wood into, by chemical means, 308.
Parabanic acid, 759.
—— —— hydrate of, 759.
—— —— preparation of, 283.
—— —— synthesis of, 75.
α-Parabromonitrotoluenesulphonic acid, 887.
β-Parabromosulphobenzoic acid, 887.
β-Parabromotoluenesulphonic acid, 886.
Paracamphoric acid, 1038.
Parachlorotoluene-sulphonates, 1136.
Paracymene, 689.
Paraffin and other materials for candle-making, black colour for, 205.
Paraffin, estimation of, in stearin candles, 1058.
Paraffins, combined action of heat and pressure on the, 250.
Parasites, vegetable, of bread, 85.
Parathionic acid from the mother-liquors of coralline, 278.
Paraxylene, action of benzyl chloride on, 272.
"Parchment solution," consisting of gutta-percha softened and extended in ether, 1276.
Parsnep oil, 640.
Paste, preparation of a good, adhesive and durable, 306.
Paste from rice-starch, 1072.
Pastinaca sativa, volatile oil of the fruit of, 640.
Peacock copper ore from Vielm-Salm, Belgium, 1114.
Peat-smoke; is it injurious to vegetation? 647.
Pebbles from Iona, 19.
Penicilium glaucum, growth of, in a saccharine liquid, 84.
Pennine from Rympfischwäng, 1114.
Pentabromoresorcin, 502.
Pentachlorobenzenes, 166, 499.
Pepper, adulteration of, 1173.
Peppermint oil, adulteration of, with castor oil and alcohol, 1273.
Pepsin, acceleration of coagulation by, 186.
Pepsin, and the digestion of fibrin without it, 761.
Peptic action of the pyloric glands, 515.
Perchlorate of yttrium, 137.
Perchloromethane, action of, on sodium ethylate, 167, 868.
Peridote, artificial formation of, 40.
Periodate of erbium, 139.
Periodate of yttrium, 137.
Periodic acid, basicity and constitution of, 595, 596.
Periodic acid, heat of formation of, 1189.

Peritoneal fluid of various fishes, 1150.
Perlite, solvent action of gypsum on, 1202.
Permanganate of potassium, action of, on milk-sugar, 46.
Perowskite, 857.
Petroleum exploration in Galicia and America, 308.
Petroleum, heptanes from, 319.
Petroleum, mineral oils, &c., continuous distillation of, at constant levels, and with fractional condensation, 660.
Petroleum, new test for the inflammability of, 532.
Petroleum distillates, fluorescent relations of certain hydrocarbons found in, 235.
Phenanthrene, 750, 895, 897, 892.
—— reduction of, 896.
—— synthesis of, 633, 896.
Phenanthrene-hydroquinone, 895.
Phenanthrene-quinone, 892, 895, 898.
Phenanthrene-sulphonic acid, 896.
Phenates and alcoholates, action of, on amides, 1240.
Phenol, Lex's test for, with ammonia and bleaching powder, 534.
Phenol, pure, is it poisonous? 79.
Phenol, new reaction of, 533.
Phenol, testing of crude, 93.
Phenol, use of, in leather dressing, 206.
Phenol and aniline, action of chlorine on a mixture of, 1147.
Phenol and creasote, distinction between, 193.
Phenol and potash, action of, on dinitrochlorobenzene, 1026.
Phenolcyanine, 1041.
Phenolparasulphonic acid, action of phosphorus pentachloride on, 1239.
Phenols, 751.
Phenols, compounds of, with aldehydes, 501.
Phenols, chloro-, nitro-, and chloronitro-, constitution of, 633.
Phenoquinone and similar compounds, 172.
Phenyl cyanide, conversion of, into phenylsulphocarbamide, 908.
Phenylallyl, synthesis of, 1029.
Phenylamine mucate, 163.
Phenylamines, di- and tri-, formation of, by the action of bromobenzene on aniline, 73.
Phenyl-benzoic acid, 893.
Phenyl-benzoic acid, formation of diphenylene ketone from, 750.
Phenyl-benzyl ketone, 1037.
Phenyl-butylene, synthesis of, 499.
Phenyl-cymyl ketone, 1036.
Phenyl-dibenzamide, 758.
Phenyl-disulphonic acid from the mother-liquors of coralline, 279.
Phenylene-diamine, 640.
Phenylene-diamine (para), 167.
Phenylmucamide, 164.
Phenyl-naphthyl ketones, 1035.
Phenyl-propiolic acid, 636.
Phenyl-propyl alcohol, 899.
Phenyl-propyl ketone, oxidation of, 1037.
Phenyl-pyrrol, 164.
Phenyl-sulphocarbimide, action of benzoic acid on, 758.
Phenyl-sulphocarbimide, desulphuration of, 909.
Phenylsulphonic acid from the mother-liquors of coralline, 279.
Phenyltolyl ketone, 1035.
Phenyltrichloride of silicium, 1026.
Phenyl-urethane, isobutylic, 266.
Phloroglucin, sulphuretted tannic acid from, 507.
Phosphate of calcium, neutral, 353.
Phosphate, monocalcic, hygroscopic character of, 1201.
Phosphate, tricalcic, decomposition of, by water, 983.
Phosphates, effect of artificial addition of, to the food of lambs, 1153.
—— assimilability of, 766.
—— assimilation of, by barley, 87.
Phosphates, alkaline, relation of, to alkali-albuminate, 187.
Phosphates, bone-, constituents of, 354.
Phosphates of erbium, 139.
Phosphates, natural, methods of analysing, 1260.
Phosphates of the Lot district, probable origin of, 609.
Phosphates of yttrium, 138.
Phosphates and arsenates, mineral, 101.
Phosphenyl chloride, 1148.
Phosphide triferrous, 826.
Phosphides, production of, by decomposition of hypophosphites, 12.
Phosphine, decomposition of, by the silent electric discharge, 1093.
Phosphines, formation of, with the aid of reduction processes, 883.
Phosphines of the propyl, butyl and amyl series, 882.
Phosphinic acids, 883.
Phosphites, reducing power of, 13.
Phosphonium iodide, spontaneously inflammable hydrogen phosphide from, 601.
Phosphonium iodide, preparation of, 842.
Phosphorescent substances, 949.
Phosphorescent uranium-compounds, analysis of the light of, 25.
Phosphoretted hydrogen, evolution of, in the decomposition of hypophosphites, 2, 12.

Phosphoretted hydrogen, spectrum of, 340.
Phosphoric acid, amount of, in coal ashes, 1066.
Phosphoric acid, estimation of, 942.
Phosphoric acid, estimation of, in Baker Island guano and in other similar guanos, 1160.
Phosphoric acid, estimation of, as uranic phosphate, 942.
Phosphoric acid, different methods of estimating, in presence of iron oxide, alumina, potash, and magnesia, 91.
Phosphoric acid, presence of, in alkaline blood, 925.
Phosphoric acid, proportion of, to nitrogen in milk, 518.
Phosphoric acid, separation of, from molybdic acid, 1260.
Phosphoric acid, separation of uranium oxide from, 1260.
Phosphoric acid, testing of, for phosphorous acid, nitric acid, and arsenic, 940.
Phosphoric acid, magnesia and lime, quick method of estimating, 294.
Phosphoric chloride, action of, on hydrobenzoïn and isohydrobenzoïn, 1140.
Phosphoric chloride, action of, on sulphochlorides, 134.
Phosphorite of Carceres, lime-uranite in the, 1110.
Phosphorous acid, reducing power of, 13.
Phosphorus, action of, on alkaline solutions of metals, 244.
—— allotropic, some compounds of, 352.
—— allotropic, modifications of, 599.
—— analysis of commercial amorphous, 89.
—— detection of, 1166.
—— —— in toxicological researches, 943.
Phosphorus, chemical relation of, to turpentine-oil, and action of the latter as an antidote in phosphorus poisoning, 179.
—— combinations of, with zinc and cadmium, 728.
—— Mitscherlich's test for, 407.
Phosphorus-bases, 284.
Phosphorus-compounds, aromatic, 1148.
Phosphorus pentachloride, action of, on phenolparasulphonic acid, 1239.
Phosphorus pentachloride, action of, on sulphonic acids, 277.
Phosphorus pentachloride, vapour-density of, 726.
Photochemical researches on the use of gases as developers, and on the influence of physical condition on sensitiveness, 1169.
Photographers' dark room, testing of yellow glass for, 948.
Photography, microscopic, 307.
Photography, polychromic, 1267.
Photography, references to papers on, 424.
Photolithography, improvements in, 948.
Phthalein of hydroquinone, 1234.
Phthalic acid, formation of, by oxidation of naphthaquinone, 1233.
Phthalyl, the radical of phthalic acid, 392.
Physometer, a new instrument for determining variable volumes of air and other gases, 349, 590.
Physostigmine, detection of, 94.
—— action of, on the organism, 79.
—— solubility of, in chloroform, 535.
Picrate of acetyl, 1238.
Picrotoxin, 641.
—— detection of, in beer, 94.
Pig-iron, analysis of, 408.
Pinacolic alcohol, 488.
Pinoline, 305.
Piperidine, supposed isomeride of, obtained from the nitro-derivative of a member of the group C_nH_{2n}, 1025.
Piperonylic acid, 1143.
Pitch from coal, composition and properties of, 419.
Pivalic acid, a new isomeride of valeric acid, 1126.
Plants, chemical processes in, 79.
—— distribution of potash and soda in, 929.
—— effect of various manures on different species of, 522.
—— electricity of, 713.
—— importance of access of oxygen to the roots of, 400.
—— influence of coloured lights on assimilation by, 292.
—— influence of the spectrum colours on the decomposition of carbon dioxide by, 400.
—— new genus of, capable of precipitating calcium carbonate, 765.
—— part borne by chlorophyll in the assimilative action of, 401.
Plants, aquatic, respiration of, 1252.
Plasma albumin, 285.
Platinocyanide of erbium, 139.
Platinocyanide of yttrium, 138.
Platinum, action of, on hydrocarbons, 1214.
—— fusion of, in a small wind furnace, 477.
—— galvanic polarisation of, 463.

Platinum-black, preparation of, 141.
Poisons, vegetable, chloroform as a solvent and means of separation for, in forensic investigations, 412.
Polarisation, determination of the amount of juice in beet, by means of, 1262.
Polarisation of platinum, galvanic, 463.
Polarisation of sugar-solutions, influence of aluminium sulphate and lead acetate on the, 92.
Polishing paste for wooden furniture, 960.
Poplar buds, essential oil of, 1237.
Poppy oil, bleaching of, 100.
Porcelain, cement for, 97.
Potamogetons, precipitation of calcium carbonate by, 765.
Potash, preparation of, from potassium sulphide, 414.
Potash, process for precipitating in the form of alum, from colours intended for roller printing, 950.
Potash and soda, distribution of, in plants, 929.
Potash, soda, &c., recovery of, from soap-water, 415.
Potassio-ferrous sulphate, 246.
Potassio-glucinic sulphates, 1004.
Potassium, vapour-density of, 926.
Potassium borofluoride, 39.
Potassium bromide, testing of, for iodine and chlorine in, 528.
Potassium bromide, detection and estimation of, in potassium iodide, 527, 528.
Potassium bromide, preparation of pure, 135.
Potassium bromide, testing of, 191.
Potassium chloride and sugar, compound of, 611.
Potassium ferricyanide, preparation of, 380.
Potassium hydrate, preparation of, 474.
Potassium hydrate and water, heat disengaged in the reaction between, 999.
Potassium iodate, behaviour of, in the animal organism, 398.
Potassium iodide, testing of, for iodate, 191.
Potassium œnanthylate, 1078.
Potassium sulphate, use of, as a flux for metallic sulphides and analogous compounds, 89.
Potassium sulphydrate, action of, on aromatic nitrils, 1241.
Potassium salts of acetic and trichloracetic acid, heat developed during the formation of the, 1100.
Potassium salts, behaviour of, in the human body, 1042.
Potassium salts, effect of, on the growth of potatoes, 1255.
Potatoes, inorganic constituents of sound and diseased, 930.
Potatoes, effect of potassium salts on the growth of, 1255.
Powders, action of electricity on, 1094.
Precipitates, washing of gelatinous, 527.
Precipitation process of iron smelting, 669.
Precious metals, extraction of, from copper pyrites, 97.
Prehnitic anhydride, 755.
Pressure, influence of reduced atmospheric, on alcoholic fermentation, 973.
Pressure-regulator, 349.
Prince Rupert's drops and the annealing of glass, 723.
Printing colour, cheap, for aniline colours on cotton, 308.
Propargyl compounds, 1123.
Propenediamine, 881.
Propionic acid, dibromopropionic acid from, 1018.
—— —— preparation of, from carbon oxide, 615.
—— —— preparation of, from lactic acid, 54.
—— —— preparation of, by oxidation of propyl alcohol, and properties of, 615.
Propyl alcohol, normal, derivatives of, 1118.
Propyl allophanate, 872.
Propyl compounds, 44.
Propyl derivatives, 365, 871.
Propyl iodide, normal, action of the dry copper-zinc couple on, 966.
Propyl iodide, normal, and water or alcohol, action of the copper-zinc couple on, 968.
Propyl iodides, action of the copper-zinc couple on, 961.
Propyl sulphide, 365.
Propyl valerate, density, boiling point, and rotatory power of, 1017.
Propyl-disulphocarbonic acid, normal, 1118.
Propylene bromide, preparation of, 487.
Propylene chlorides, 1015.
Propylenic hydrocarbons, 486.
Propyl-phenyl ketone, oxidation of, 1037.
Protocatechuic aldehyde, formation of, 1143.
Protoplasmic life, power of certain substances to prevent the development of, 405.
Prussic acid, detection of, 1168. See also Hydrocyanic Acid.

Pseudocumenes, dinitro-, 888.
Pseudoïsopyrine, 512.
Pseudomorphosis of garnet into mica, and of augite into talc, 356.
Pseudotoluidine, derivatives of, 912.
Pseudotoluidine and toluidine, separation of, 911.
Ptyalin, acceleration of coagulation by, 186.
Pucherite, 253.
Pucherite from Schneeberg, crystalline forms of, 1011.
Pulmonary tissue, nutrition of, in health and when affected by disease from phthisis, 186.
Purple of the ancients, 657.
Purple of Cassius, 604.
Purpurates, 75.
Putrefaction, 763.
Putrefaction, power of certain substances to prevent, 403.
Putrefaction, relation of bacteria to, 406.
Pyloric glands, peptic action of, 515.
Pyridine, crystalline form of ethylene-platino-chloride of, 471.
Pyridine obtained by the action of heat on morphine derivatives, 1085.
Pyrites, source of error in the estimation of, 531.
Pyrites, roasting of, 956.
Pyrites, estimation of sulphur in, 530.
Pyrocatechin, constitution of, 387.
Pyrocatechin, formation of, in leaves in autumn, 1049.
Pyrocatechin and organic acids, simultaneous formation of, from grape-sugar, 1050.
Pyrochlore, 479.
Pyrogallate of lead, 702.
Pyrogallic acid, action of iodic acid on, 1239.
—— —— action of iron salts on, 1259.
—— —— action of ozone upon, 1031.
—— —— reaction of, with quinone, 172.
Pyrogalloquinone, 172.
Pyromellitate, methylic, 756.
Pyrometer, acoustic, 591.
Pyrometer, calometric, for the determination of high temperatures, 1194.
Pyromucic acid, 624.
Pyrophosphates, production of, by decomposition of hypophosphites, 12.
Pyroracemic acid, 1128.
—— —— new acid from, 1221.
—— —— action of phosphoric chloride on, 1221.
Pyroracemic ethers, 377.
Pyrovanadate of thallium, 326.
Pyroxene, artificial formation of, 40.
Pyrrol-red, formation of, from pyromucic acid, 624.
Pyrology, or fire analysis, 537.
Pyruvic acid, reactions of, 495.

Q.

Quartz, fibrous, from South Africa, a pseudomorph after crocidolite, 739, 1209.
Quartz formed by volcanic sublimation, 251.
Quartz-crystals from the Wallis, 857.
Quartzite, limestone, and associated rocks of Great Barrington, Massachusetts, 257.
Quercite-sulphuric acid, and a sugar different from quercite derived therefrom, 166.
Quick matches, red, preparation of, from gun-cotton, 956.
Quinazarin, 123.
Quinhydrone, composition of, 172.
Quinhydrone, constitution of, 388.
Quinic acid, physiological action of, 398.
Quinine, action of, in restraining the ozonising power of blood and of hæmoglobin, 288.
—— detection of morphine in, 535.
—— influence of crystalline and amorphous, on the white blood-corpuscles and on the formation of pus, 647.
—— removal of nitrogen from, 1041.
—— testing of, 410.
Quinine meconate, 1148.
Quinine and quinidine, solubility of, in chloroform, 535.
Quinone, constitution of, 897.
Quinone, reaction of, with pyrogallic acid, 172.
Quinone anilide, 173.
Quinones, behaviour of, when heated with soda-lime, 635.

R.

Racemic acid, conversion of dextrotartaric acid into, 166.
Racemic acid and inactive tartaric acid, reciprocal transformation of, 270.
Rape oil, bleaching of, 100.
Red colouring of ivory, gelatin, feathers, &c., 423.
Red, deep, on cotton with "rouge de Tournai," 423.
Reducing and oxidising agents, experiments on, 1186.
Refraction-equivalents of carbon, hydrogen, and oxygen, 460.
Refraction-indices of the sulphuretted substitution-products of the carbonic ethers, 620.

Refractive powers of saline solutions, modular properties of, 460.
Reptiles, chemical constituents of the eggs of, 924.
Residues obtained in removing the fat from wool by Chaudet's process, utilisation of the, 1273.
Resorcin from Brazil-wood extract, 899.
Resorcin, constitution of, 387.
Resorcin, mono-iodated, 275.
Resorcin, pentabrominated, 502.
Respiration of aquatic plants, 1252.
Respiration of beet-root, 1050.
Respiration of fishes, 929.
Respiration of frogs, 1154.
Respiration of land-plants, 1049.
Respiration in the lungs, 929.
Respiratory combustion, 398.
Rhamnus Frangula, frangulin from, 503.
Rittingerite, 852.
River mud, analysis of, 1214.
Rocks, characters of the crust produced upon terrestrial, by atmospheric agency, compared with the black coating of certain meteorites, 141.
Rocks, decomposition of, by gypsum, 1202.
Rocks, volcanic, remarks on the minerals inclosed in, 739.
Roman chamomile, oil of, 1226.
Rosa, a new aniline colour, 207.
Rosaniline, Brüning's new method of manufacturing, 959.
Rosaniline, decomposition of, by water, 1241.
Rosaniline, manufacture of, 658.
Rosaniline, violet derivatives of, 913.
Rosin-oil, 304, 1175.
Rosin-oil soap, preparation of, 305.
Rosolate of calcium, accidental formation of, 275.
Rosolic acid, 434, 902.
Rotating furnace for the smelting of iron and steel, 668, 674.
Rouge de Tournai, deep red on cotton with, 423.
Rubidium, preparation of, from beet-root ash, 474.

S.

Sabadilline, solubility of, in chloroform, 535.
Saccharate of calcium, monobasic, 876.
Saccharifying ferment of the blood, 1245.
Saccharine matter contained in mushrooms, 759.
Saccharometer, optical, 829.
St. John's bread, butyric acid from, 374.
Salicylanilide hydrocyanide, 907.
Salicylic acid, anilide of, 906.
—— —— nitranilide of, 907.
—— —— toluidide of, 907.
Salicylic aldehyde, action of ammonia and hydrocyanic acid on, 908.
Salicylic aldehyde, derivatives of, 907.
Salicyl-paranitranilide, 907.
Saline mixtures, solubility of, 1101, 1102.
Saline solutions. See Solutions.
Saliva, indications of a nitrite in, 536.
Saliva, detection of sulphocyanogen in, 536.
Salt, common, its importance in the animal organism, 1042.
Salt earth from the primeval forest of Brazil, analysis of, 483.
Salt manufacture, 413.
Salt-spring in Huel Seaton Mine, composition and origin of the waters of a, 857.
Salts, the alkalinity or acidity of certain, as indicated by their reaction with test-paper, 1159.
Salts, action of heat on solutions of hydrated, 34.
Salts, coercive action of, on water, 129.
Salts, state of, in solution, 35, 236.
Salts, metallic, influence of, on the growth of *Aspergillus niger*, 648.
Salts, metallic, reactions of various, 845.
Santonates, 1230.
Santonic acid, action of nascent hydrogen on, 1231.
—— —— formation of, from santonin, 1229.
Santonin, 162, 1229.
Santonin bromide, 1231.
Santonites, 1231.
Santonol, liquid, 162.
Sap, pressure of, in the vine, 293.
Sapinda Saponaria, butyric acid in the fruit of, 375.
"Schot-brod," 424.
Sea-water, gases contained in, 860.
Selenate of glucinum, 1004.
Selenate of yttrium, 138.
Selenic acid and selenates, 725.
Selenite of erbium, 139.
Selenite of glucinum, 1004.
Selenite of yttrium, 138.
Selenium, action of light on the electrical resistance of, 998.
Selenium, thermochemical determination of the affinity of oxygen for, 1191.

Serpentine, 735, 1010.
Serpentine and olivine of Snarum, 607.
Shark, cartilage of the, 1243.
Sheep of various ages, assimilation by, 519.
Sheep, feeding experiments with, 519.
Shoddy, testing of, 1168.
Siemen's-Martin process for the production of cast steel, 661.
Signal fireworks, mixtures for, 1068.
"Silber-light," 1273.
Silica, solubility of, in aqueous ammonia, 473.
Silica and some analogous oxides, action of, on sodium carbonate at high temperatures, 135, 243.
Silicate of sodium, antiseptic properties and physiological action of, 85, 294, 400.
Silicic acid, amorphous, 243.
Silicic acid, hydrated, 351.
Silicic ether and its derivatives, reduction-products of, 49.
Silicic mercaptan, 53.
Silicium, aromatic compounds containing, 1026.
Silicium, conditions necessary for the manufacture of iron highly impregnated with, in a blast-furnace, 1067.
Silicium chloride, reactions of, 351.
Silicium chlorobromide, 53.
Silicium methyl-ether, action of zinc-ethyl on, 488.
Silicium oxychlorides, 746.
Silicium phenyltrichloride, 1026.
Silicium trichlorobromide, 54.
Silico-acetic anhydride, 52.
Silico-aluminate of manganese containing vanadium, 355.
Silicobenzoic anhydride, 1026.
Silico-diethyl chloride and oxide, 49, 50.
Silicofluoride of sodium, preparation of, and use of, in volumetric analysis, 406.
Silico-heptyl compounds, 51, 52.
Silico-heptyl ether, 50.
Silicolate of sodium, 51.
Silicon. See Silicium.
Silicon-ethyl trichloride, 49.
Silicopropionic acid, 49.
Silicopropionic ethers, 871.
Silico-triethyl ether, 50.
Silk, use of molybdic acid for the blue colouring of, 306.
Silver, methods of extracting, in Mexico, 416.
Silver, obtaining, by amalgamation, in Chile, 1172.
Silver, easy method of cleaning, 1072.
Silver, quick reduction of, from old solutions, by means of phosphorus, 245.
Silver, precipitation of, by copper, 1007.
Silver, presence of, in commercial subnitrate of bismuth, 308.
Silver-amalgam, native, 356.
Silver chloride, separation of gold from, 728.
Silver chloride, an instance of the stability of, in sunlight, 845.
Silver nitrate, action of, on cane-sugar, 46.
Silver nitrate and nitric acid, action of, on certain morphine and codeine derivatives, 1087.
Silver oenanthylate, 1080.
Silver-palladium sulphopalladate, 1197.
Silver vanadate (β) or octovanadate, 336.
Silver salts, application of the reduction of, to the reproduction of designs, 537.
Silver salts, sensibility of haloïd, under alkaline development, 948.
Silver salts, reaction of, with barium hypophosphite, 13.
Silver salts, reaction of, with phosphorous acid, 13.
Silver salts, ammoniacal, 1106.
Silvering of glass, 419.
Simplification of Scheibler's apparatus for estimating the refining value of raw sugar, 1060.
Siphon, a new, 835.
Size containing tannic acid, use of, for fixing aniline colours, 1276.
Skin, human, quantity of carbonic acid excreted by, 397.
Slags for blast-furnaces, various uses for, 656.
Smoke from the Freiberg works, influence of, on the neighbouring vegetation and the health of domestic animals, 1155.
Soap (rosin oil), preparation of, 305.
Soaps, analysis of, 195.
Soap-water, recovery of potash, soda, &c., from, 415.
Soda, new process in the preparation of caustic, 414.
Soda, caustic, separation of, into portions of different strengths on passing from the solid to the fused state, 949.
Soda used for glass-making, Glauber's salt in, 538.
Soda, preparation of, from sodium sulphide, 414.
Soda and potash, distribution of, in plants, 929.
Soda, potash, &c., recovery of, from soap-water, 415.
Soda-waste, composition of the liquors

obtained by the oxidation and lixiviation of, in the recovery of sulphur therefrom, 197.
Sodio-glucinic sulphate, 1004.
Sodium, action of, on chlorinated nitro-compounds, 168.
Sodium, causes of the loss of, in the manufacture of soda, by Leblanc's process, 196.
Sodium aluminate, use of, in calico-printing, 1271.
Sodium amalgam, action of, on dinitro-heptylic acid, 1019.
Sodium carbonate, action of silica and analogous oxides of, 135.
Sodium chloride, importance of, in the animal organism, 1042.
Sodium ethylate, constitution of, 44.
Sodium formate, action of, on benzoic acid, 1238.
Sodium hydrate, preparation of, 474.
Sodium hydrate and water, heat disengaged in the reaction between, 999.
Sodium hypophosphite, 2.
Sodium monochromatic light, use of, to distinguish the changes of colour in alkalimetry, 935.
Sodium œnanthylate, 1078.
Sodium silicate, antiseptic properties and physiological action of, 400.
Sodium silicofluoride, 406.
Sodium sulphide, formation of, by the action of hydrogen sulphide on sodium chloride at high temperatures, 451, 456.
Sodium sulphide, action of, on glycerin, 868.
Sodium vanadate (β), or octovanadate, 335.
Soil of Munich, amount of carbon dioxide in the air of, 361.
Soil (salt earth) from the primeval forest of Brazil, analysis of, 483.
Soil-analyses and their utility, 298.
Soils, increase of fertility of, by gypsum, 1202.
Soils, estimation of manganese in, 193.
Soils, nitrates in, 1198.
Solanine, insolubility of, in chloroform, 535.
Solanine in *Solanum Lycopersicum*, 918.
Solanine, tests for, 1263.
Solar spectrum, experimental researches on the, 340.
Solfatara of Puzzuoli, stalagmitic formations of the, 478.
Solidifying points of fats, 237.
Solubility estimations in general, 410.
Solution, state of salts in, 35, 236.
Solution of various solid, liquid, and aëriform substances in water, thermochemical researches on the, 1101.
Solutions, alkaline, constitution of, 1098.
Solutions of hydrated salts, action of heat on, 34.
Solutions, molecular volume of, 715.
Solutions, saline, constitution of, 1096.
—— —— force of crystalline dissociation in, 31.
—— —— modular properties of refractive powers of, 460.
—— —— statics of, 468.
—— —— transpiration of, 468.
Solutions, saturated and unsaturated, 470.
Solutions, supersaturated, 469.
—— —— causes of crystallisation in, 472.
—— —— supposed action of liquid films on, 720.
—— —— action of solid bodies on, 347.
Solutions supersaturated with gases, action of solid bodies on, 590.
Solvents, influence of inactive, on the specific rotatory power of active substances, 461.
Sorghum, composition of the seeds of two varieties of, 402.
Spa water. See Water.
Specific gravity of liquids, easy and exact method of determining, 577.
Specific heat. See Heat.
Specific rotatory power of active substances, influence of inactive solvents on, 461.
Spectra of ammonia and phosphoretted hydrogen, 340.
Spectra of some cobalt-compounds in blow-pipe chemistry, 1161.
Spectra of gases, effect of pressure on, 996.
Spectra of metals, 461.
Spectral analysis, peculiarities observed during researches on, 1257.
Spectral analysis, quantitative, 1258.
Spectral analysis and the spectro-sodiometer, 934.
Spectral analysis, with especial reference to the spectrum of the sun, 994.
Spectral lines of low temperature, 711.
Spectral phenomena presented by different solutions of chlorophyll, 996.
Spectrum, distribution of chemical force in the, 232.
Spectrum of Bessemer flame, 461.
Spectrum of chlorophyll, 341.
Spectrum of chlorophyll, influence of light of various colours on the, 713.
Spectrum of chlorophyll, modifications of, under the influence of alkalis, 582.
Spectrum of erbium, 829.
Spectrum of nitrogen, 340.
Spectrum colours, influence of, on the

decomposition of carbon dioxide by plants, 400.
Speiss, analysis of, 1261.
Sphene from the Eisbrückalp, Tyrol, 1011.
Spiegeleisen, 202.
Spiegeleisen, action of, in the Bessemer process, 298.
Spirit, crude, defuselation of, by wood-charcoal, 308.
Spirits, action of low temperatures on, 1173.
Stahlbrunnen at Homburg, analysis of the, 742.
Stalagmitic formations of the Solfatara of Puzzuoli, 478.
Standardising of acids, 123.
Stannic chloride, preparation of, 1274.
Stannopropyl compounds, 366.
Stannous chloride, heat evolved in the action of chlorine on, 1095.
Starch, action of nitrogen iodide on, 46.
Starch, digestion of boiled, 395.
Starch, influence of, on the solubility of albumin, 919.
Starch, separation of, from dextrin, 394.
Starch-paste, prevention of mould in, 100.
Staurolite, 854.
Steam and air, condensation of a mixture of, upon cold surfaces, 1001.
Steam-boiler explosion, miniature, 1002.
Stearic and palmitic acids, Bock's process for producing, 658.
Stearin, new process in the manufacture of, 1173.
Stearin candles, estimation of paraffin in, 1058.
Stearoptene in the flowers of *Clandestina rectiflora*, 513.
Steel, analysis of, 408.
Steel, influence of acids on, 848.
Steel, colorimetric estimation of combined carbon in, 295.
Steel, colorimetric method for the estimation of manganese in, 407.
Steel, impurities of, 665.
Steel, manganese in, 204.
Steel, new process for the manufacture of, 418.
Steel, solution of gases in, 729.
Steel and iron, smelting of, 661.
Steel, Bessemer, distribution of carbon in, 953.
Steel, Mushet's, 204, 955.
Steel wire and graving tool steel, to produce diamond hardness in, 418.
Stilbene, crystalline form of, 383.
Stilbene, formation of, 889.
Stilbene group, new members of the, 890.
Stone, Ransome's new artificial, 416.
Storax, occurrence of benzyl alcohol in liquid, 65.
Straw, dyeing of, with aniline-green, 305.
Strontium dioxide, 812.
Strontium hydrate, heat of formation of, 1097.
Strontium hypophosphite, 7.
Struvite, new source of, 1107.
Strychnine, detection and separation of, in chemico-legal investigations, 194, 1265.
Strychnine, solubility of, in chloroform, 535.
Styrolene, formula of, 45.
Suberate, diethylic, synthesis of, 495.
Subhydrate of nitric acid, 173.
Succinate of erbium, 139.
Succinate of yttrium, 138.
Succinic acid, transformation of, into maleic acid, 1127.
Succinic acid (dibromo-), action of bromine on, 621.
Sucrocarbonates of lime, 612.
Sugar, action of an alkaline copper solution on cane-, and on mixtures of cane- and grape-, 193.
—— action of crystallisable, on Felling's solution, 296.
—— action of silver nitrate on, 46.
—— estimation of, 1059.
—— estimation of, by Barreswil's method, 1060, 1164.
—— estimation of the yield of pure from various raw beet-sugars, 296.
—— oxidation of, in the arterial system, 398.
—— products of the distillation of, with lime, 490.
—— refining of, and recovery of, from molasses by alcohol, 99.
—— Sebor's method of getting, from molasses, 1276.
Sugar and potassium chloride, composition of, 611.
Sugar of beet, changes in, 659.
Sugar, cane-, conversion of, into glucose by the action of light, 490.
Sugar different from quercite, derived from quercite-sulphuric acid, 166.
Sugar, raw, method of obtaining comparable results in the commercial valuation of, 298.
Sugar, raw, simplification of Scheibler's apparatus for estimating the refining value of, 1060.
Sugar, raw, of the third produce, and commercial analysis of the same, 957.
Sugars, researches on, 160.
Sugars, copper-solutions for the estimation of, 410.

Sugar-beet, changes in, 297.
Sugar-beet, estimation of juice in, 297.
Sugar-beet, experiments on the cultivation of, in the Campagna Romana, 1254.
Sugar-beet, presence of arabic acid in, 1124.
Sugar-factory, processes for estimating the alkalinity of juice in the, 1060.
Sugar-lime, as a solvent for glue, 306.
Sugar-solutions, action of yeast on, 46.
—— —— influence of aluminium sulphate and lead acetate on the polarisation of, 92.
Suint, constitution of, 1219.
Sulphacetic acid, action of phosphorus pentachloride on, 1022.
Sulphate of aluminium, testing of, 1162.
Sulphate of ammonia, production of, from nitrogenous waste, 1066.
Sulphate of cadmium, action of a copper-cadmium couple on a solution of, 465.
Sulphate of calcium, action of magnesium carbonate on, in the presence of common salt, 475.
Sulphate, ferrous, and its double salts, 246.
Sulphate of lead, estimation of, in commercial lead chromate, 1056.
Sulphate of magnesium, cobaltiferous, 1114.
Sulphate of potassium, use of, as a flux for metallic sulphides and analogous compounds, 89.
Sulphate of yttrium, 137.
Sulphates of the alkalis, conversion of, into the carbonates, tartrates, &c., in the moist way, 1003.
Sulphates of the alkalis and alkaline earths, isomorphism of the anhydrous, 247.
Sulphates of erbium, 139.
Sulphates of the ethylated derivatives of the cinchona alkaloïds, optical properties, 1183.
Sulphates of glucinum, 1003.
Sulphates of yttrium, double, 138.
Sulphide, $C_{14}H_8S_2$, produced by dry distillation of chlorobenzyl sulphide, 1032.
Sulphide of carbon. See Carbon Sulphide.
Sulphide of potassium, action of, on various salts, 845.
Sulphide of propyl, 365.
Sulphide of sodium, action of, on glycerin, 868.
Sulphide of sodium, formation of, by the action of hydrogen sulphide on sodium chloride at high temperatures, 456.
Sulphides, action of sulphurous acid on recently precipitated insoluble, 349.
Sulphides, alkaline: changes which they undergo on dilution, 861.
Sulphides of ammonium, action of copper on, 1105.
Sulphite of erbium, 139.
Sulphite of glucinum, 1004.
Sulphite of yttrium, 138.
Sulpho-acids, organic, preparation of, 1021.
Sulphobenzophenone, 276.
Sulphobutyric acid, 747.
Sulphocarbamic acid, derivatives of, 265, 628.
Sulphocarbimide, phenylic, action of benzoic acid on, 758.
Sulphocarbimides, 881.
Sulphocarbimides and cyanides, aromatic, mutual convertibility of, 908.
Sulphocarbonic ethers, 617.
Sulphocarbonic ethers, isobutylic, 266.
Sulphochlorides, action of phosphoric chloride on, 134.
Sulphocyanate of ammonium, action of acetic anhydride on, 1224.
Sulphocyanate of erbium, 139.
Sulphocyanate of ethyl, 1224.
Sulphocyanate of potassium, preparation of, 879.
Sulphocyanate of yttrium, 138.
Sulphocyanates, action of, on benzoic acid, 636.
Sulphocyanates, metallic, action of, on metallic salts of organic acids, 363.
Sulphocyanogen, detection of, in saliva, 536.
Sulphodibromazobenzolic acid, 384.
Sulphoform, 363.
Sulphohydantoïn, 1131.
Sulpho-isonaphthoic acid, 1138.
Sulphomorphide, identical with tetramorphine sulphate, 222.
Sulphonic acids, action of phosphorus pentachloride on, 277.
Sulphopalladate of silver and palladium, 1197.
Sulphophenic acid, 284.
Sulphoplatinate, tetraplatinous, 1198.
a-Sulphopropionic acid, preparation of, 873.
Sulphopyruvic acid, reaction of, with bromine, 495.
Sulpho-salts, new, 1197.
Sulphostannate, tetraplatinous, 1197.
Sulpho-urea, 1130, 1131.
Sulpho-urea, benzoic, 1132.
—— —— glycolylic, 1131.
Sulphovinates, action of water on, 869.
Sulphur, absence of, in Spiegeleisen, 665.
—— action of, on arsenic, 843.
—— affinity of hydrogen for, 126.
—— conversion of, into sulphuretted hydrogen in a fermenting liquid, 81.

Sulphur, crystalline forms of, 826.
—— detection of, by the blowpipe, 1160.
—— a generally applicable method of determining, 939.
—— estimation of, in bile, 536.
—— estimation of, in pyrites, 530.
—— new modes of action of, on organic compounds, 363.
—— removal of, from coke, 826.
—— thermochemical determination of the affinity of oxygen for, 1198.
Sulphur and ammonia, removal of, from coal-gas by a continuous process, 1270.
Sulphur and iodine, behaviour of, to mercury, 476.
Sulphur-acids, formation of, 720.
Sulphur bromide, 823.
Sulphur-compound in the thermal waters of the Pyrenees, nature of the, 861.
Sulphur dioxide, boiling-point of liquid, 597.
Sulphur-spring, action of a, on cast iron, 1106.
Sulphur-spring at Lostorf, in the Solothurn Jura, 743.
Sulphur tetrachloride, existence and dissociation of, 132.
Sulphur-ureas, aromatic, preparation of, 1241.
Sulphuretted chlorocarbonic ethers, 1222.
Sulphuretted hydrogen. See Hydrogen Sulphide.
Sulphuretted springs of S. Venera al Pozzo, at the eastern base of Etna, 863.
Sulphuretted substitution-products of the carbonic ethers, indices of refraction of, 620.
Sulphuretted waters of Eaux-Bonnes, influence of a limited supply of air on, 861.
Sulphuric acid, action of, on chloral, 878.
—— —— production of, by combustion of coal-gas, 986.
—— —— reduction of, by hydrogen, 1002.
—— —— volumetric estimation of, 529.
Sulphuric acid manufacture, chemistry of, 538.
—— —— —— theory and practice of, 413.
Sulphuric anhydride, action of ethyl chloride on, 1216.
Sulphurous acid, 724.
—— —— action of, on recently precipitated insoluble sulphides, 349.
—— —— function of, when used for the saccharification and alcoholisation of grain, 304.
Sulphurous impurity in coal-gas, 299.
Sulphuryl chloride, production of, from sulphuric anhydride and boron chloride, 597.
Sulphydrate of potassium, action of, on aromatic nitrils, 1241.
Sun's atmosphere, absorption of chemically active rays in the, 712.
Sunlight, chemical efficiency of, 24.
Sunspots, theory of, 838.
Superphosphates, their adulterations and valuation, 530.
Supersaturated solutions of lactates, 165.
Supersaturation, researches on, 470.
Synaphy (cohesion) of compound ethers, &c., 587.
Syngenite, 254.
Syngenite, identity of kaluszite with, 852.

T.

Tallow, to purify, and make generally useful, 1071.
Tannic acid, new reaction of, alkalis with, 95.
—— —— use of size containing, for fixing aniline colours, 1276.
—— —— sulphuretted, from phloroglucin, 506.
Tar from coal, composition and properties of, 419.
Tarconium-thallium iodide, 476.
Tartaric acid, formation of, from ethylene, 743.
Tartaric acid, inactive, and racemic acid, reciprocal transformation of, 270.
Tartrate of yttrium, 138.
Tartrates of the alkalis, formation of, from the sulphates in the moist way, 1003.
Taurocarbamic acid, 1129.
Taurocholic acid, estimation of, in bile, 536.
Tea, influence of, on the excretion of urea, 1152.
Tea, variations in the amount of urea excreted under the influence of, 1248.
Tea-leaves, estimation of caffeine in, 411.
Tectochrysin, 1236, 1238.
Tellurium mineral, a new, 989.
Tellurium, native arsenio-sulphide of, occurring with arsenical iron pyrites, 989.
Tellurium ore of Nagyag in Transylvania, working of the, 1003.
Tellurium, preparation of, 475.
Tellurium, thermochemical determination of the affinity of oxygen for, 1191.
Temperature constants, 241.

Temperature, determination of degrees of, in absolute units, 465.
Temperature-regulator for gas and lamp flames, 471.
Terebene, 1137.
Terebene, alleged synthesis of, 383.
Terephthalic acid, formation of, by the action of sodium formate on benzoic acid, 1238.
Terephthalic acid obtained by oxidation of oil of turpentine, lemon, &c., probably derived from cymene pre-existing in the oils, 552.
Terpene of nutmeg-oil, cymene from the dibromide of, 693.
Terpenes, isomeric, and their derivatives, 549, 686.
Terrestrial rocks. See Rocks.
Tertiary alcohol, new, and a method of preparing a series of tertiary alcohols, 488.
Tertiary butyl chloride from butylene, 368.
Test-paper, alkalinity or acidity of certain salts and minerals, as indicated by the reactions with, 1159.
Tetra-base chlorinated, formed by the action of hydrochloric acid on morphine, 218.
Tetrabromadipic acid, 623.
Tetrabromazoxybenzene, 385.
Tetrabromide of carbon, formation of, from bromoform, 865, 1013.
Tetrabromobutyric acid, formation of, from mucobromic acid, 625.
Tetrabutylammonium iodide, 367.
Tetracetomannitan, 1124.
Tetrachlorethyl oxide, 158.
Tetrachloride of sulphur, existence and dissociation of, 132.
Tetracodeine, product obtained from, by the action of silver nitrate and nitric acid, 1088.
Tetradecavanadate of thallium, 335.
Tetramethylammonium, toxic effects of, 763.
Tetramethyl-aniline from coal-tar, 912.
Tetramorphine, physiological action of, 224.
Tetramorphine, product obtained from, by the action of silver nitrate and nitric acid, 1088.
Tetramorphine sulphate, identical with the sulpho-morphide of Laurent and Gerhardt, 222.
Tetramylammonium, toxic effects of, 763.
Tetramylphosphonium iodide, 883.
Tetra-nitrodiphenylmethane, 170.
Tetraplatinous sulphoplatinate, 1198.
Tetraplatinous sulphostannate, 1197.
Tetrapodimorphine, or an isomeric body, formed by the action of zinc chloride on morphine, 212.
Tetrapodimorphine, formation of, by the action of hydrochloric acid on morphine, 215.
Tetrapotetramorphine, 917.
Tetrapropylammonium iodide and hydrate, 119.
Tetrethylphosphonium-thallium iodide, 476.
Tetrethylsulphine-thallium iodide, 476.
Tetrisopropylphosphonium iodide, 882.
Textile fabrics, recognition of colours on, 654.
Thallio-mercuric chloride, 476.
Thallium, atomic weight of, 355.
Thallium and vanadium, separation and estimation of, 324.
Thallium compounds, 475.
Thallium hypophosphite, 2.
Thallium metavanadate or dodecavanadate, 334.
Thallium sulphate, decomposition which takes place on adding, to a boiled solution of sodium pyrovanadate, 331.
Thallium vanadate, decomposition which takes place on adding, to sodium octovanadate, 331.
Thallium vanadates, 323.
β-Thallium vanadate, 329.
γ-Thallium vanadate, 332.
δ-Thallium vanadate, or tetradecavanadate, 335.
Thebaine, solubility of, in chloroform, 535.
Theobromine, solubility of, in chloroform, 535.
Thermal waters. See Waters.
Thermo-analyser, experiments with the, 526.
Thermochemical determinations of the affinities of oxygen for sulphur, selenium, and tellurium, 1190.
Thermochemical investigations: affinity of hydrogen for the non-metallic elements, 126, 838.
Thermochemical researches on the solution of various solid, liquid, and aëriform substances in water, 1104.
Thermodiffusion of gases, 834.
Thermo-electric battery, new form of Noë's, 465.
Thermometer for deep sea observations, 591.
Thermometers, determination of the true zero of, 129.
Thermometers, injuries received by, during transport, 413.
Thiamides, 909.
Thioamylic acid from the mother-liquors of coralline, 278.
Thiocarboxyl-pyruvic acid, 75.

Thiocuminamide, action of nascent hydrogen on the product of the action of iodine on, 910.
Thiocymene, 1030.
Thiopyruvic acid, 74.
Thiosulphate of sodium ("hypo"), estimation of ferric oxide by, 1162.
Thiuram-sulphide, 629.
Tin, recovery of, from tinned iron plates, 205.
Tin-caps, so-called, for bottles, flasks, &c., 1172.
Tinning, &c., of brass, copper, iron, &c., in the wet way, 955.
Tin-plate cuttings, utilisation of, 308.
Tissue change in the animal body after blood-letting, 644.
Tissues, muscular and pulmonary, nutrition of, in health and when affected by disease from phthisis, 186.
Titanium chloride, combinations of, with ethers, 1015.
Tobacco-smoke, nicotine in, 760.
Tolane, formation of, by distillation of barium benzoate and sulphocyanate, 363.
Toluene-dicarboxylic acid, 506.
Toluenedisulphonic acid, 505.
Toluenes, chlorinated, 1135.
Toluic acid, meta-, 276.
Toluic acid (para-), preparation of, from solid toluidine, 902.
Toluidine, action of chloracetyl chloride on, 911.
Toluidine mucate, 165.
Toluidine and pseudotoluidine, separation of, 911.
Tolyl cyanide, conversion of, into ditolylsulphocarbimide, 908.
Tolyl-mucamide, 165.
Tolyl-phenyl ketone, 1035.
Tolyl-phenyl ketone, action of heated lead oxide on, 1135.
Tolyl-sulphocarbimide, desulphuration of, with copper dust, 902.
Toxicological investigations, improvements in, 1165.
Trachyte, solvent action of gypsum on, 1202.
Tracing paper, 659.
Transformation, heat of, 998.
Trees, influence of coal gas on the growth of, 647.
Trees and shrubs, effect of coal gas on, 401.
Triacetyl-anthrapurpurin, 430.
Triacetyl-aurin, 440.
Triamidobenzene, constitution of, 280.
Triamido-orcin, 752.
Triamylphosphine oxide, 884.
Tribenzhydroxylamine, crystalline form of, 585.
Tribenzoyl-leucaurin, 441.
Tribromadipic acid, 623.
Tribromethene dibromide, formation of, from mucobromic acid, 625.
Tribromodialdehyde, 487.
Tributylamine, 367.
Tricalcic phosphate, decomposition of, by water, 983.
Trichloracetal, 158.
Trichloracetate of potassium, heat developed during the formation of, 1100.
Trichloracetic acid and its salts, 745.
Trichloracetyl, chloride, bromide, and iodide of, 745.
Trichlorethylene chloride, action of, on sodium ethylate, 867.
Trichloride, silicopropionic, 49.
Trichlorodimethylaniline, 279.
Tricodeine, action of hydrochloric acid on, 226.
Tricyanobenzene, formation of, from dibromobenzenesulphonic acid, 1143.
Tridymite, 250.
Tridymite imbedded in rock crystal, 1012.
Triethyl-silicoheptyl acetic ether, 51.
Triethylsilicol, 51.
Triferrous phosphide, 826.
Tri-isobutylphosphine hydriodide, 882.
Tri-isopropyl phosphine, 882.
Trimellitic acid, 756.
Trimellitic acid, formation of, by oxidation of colophony, 889.
Trimethylacetic acid, 48.
Trimethylacetic acid, preparation of, 1020.
Trimethylamine, action of, on chloral, 878.
Trimethyl-anisbetaine, 1146.
Trimethyl-benzbetaine, 1146.
Trimethyl-carbinol, 369, 873.
Trimethyl-carbinol, preparation of, 1119.
Trimethyl-ethyl-formene, 43.
Trimorphine, action of hydrochloric acid on, 226.
Trimorphine, physiological action of, 224.
Trinitrodibromazobenzene, 384.
Trinitrodimethylaniline, 279.
Trinitronaphthalene, 1138.
Trinitronaphthalenes, 69.
Trioxytrinitrazobenzene, 1028.
Triphenylamine, formation of, by the action of bromobenzene on aniline, 73.
Triphenyl-benzene, 1036.
Triphenyl-methane, 171.
Tripropyl-biuret, 1119.
Tripseudotolyl-guanidine, 912.
Trögerite, 606, 1109.
Tube-hydrometers, new application of, 131.

Turpentine, conversion of, into cymene, 889.
Turpentine, detection of, in volatile oils, by means of alcohol, 1058.
Turpentine oil, chemical relation of, to phosphorus, and action of, as an antidote in phosphorus-poisoning, 179.
Turpentine oil, cymene from, 691, 700.
Twin-crystals, contribution to the theory of, 257.
Tyrolite, 108.

U.

Ultramarine, 140.
Ultramarine, composition of, 475.
Ultra-violet rays, direct visibility of, 125.
Unona odoratissima, essence of, 1149.
Uramidodracylic acid, derivatives of, 178.
Uranite (lime-) in the phosphorite of Carceres, 1110.
Uranium, atomic weight of, 247.
Uranium, quantitative determination of, 531.
Uranium compounds, analysis of the light of phosphorescent, 25.
Uranium hypophosphite, 11.
Uranium mica, arseniferous (zeunerite), from Joachimsthal, 1010.
Uranium minerals, 606, 1108.
Uranium oxide, separation of, from phosphoric acid, 1260.
Uranosphærite, 606, 1109.
Uranospinite, 1109.
Uranotil, 1108.
Urea, amount of, excreted, as influenced by tea and coffee, 1152.
—— detection of bromine in presence of, 190.
—— new method for the estimation of, 411.
—— variations in the amount of, excreted under the influence of caffeine, coffee, and tea, 1248.
Urea, chloracetylic, 758.
Urea, lactylic, 380.
Urea, sulpho-, 1130, 1131.
Uric acid, estimation of, in diabetic urine, 536.
Uric acid, estimation of, by Bunsen's process, 535.
Uric acid group, researches in the, 282.
Urinary calculi, structural composition of, 517.
Urine, ammonia in the, in health and in disease, 516.
—— a new constituent of, 1242.
Urine, origin of indican in, 516.
Urine, diabetic, estimation of uric acid in, 536.
Urine, physiological alcohol in human, 399.
Urine, presence of bile-acids in normal, 928.

V.

Valeral, action of sodium and of caustic potash on, 58.
Valeraldehyde, action of ammonia on, 626.
Valerate, normal ethylic, 368.
Valerianic or valeric acid, 55.
Valeric acid, new isomeride of (pivalic acid), 1126.
Valeric acid, preparation of, on the large scale, 874.
Valeric acid and ethers, density, boiling point, and rotatory power of, 1017.
Valeric ether, 367.
Valeritrine, 1023.
Vanadates of thallium, 323.
Vanadic acid (meta-), 605.
Vanadium in native silico-aluminate of manganese from Salm-Château, Belgium, 355.
Vanadium and thallium, separation and estimation of, 324.
Vanadium-bronze, 605.
Vapour blowpipe, alcoholic, 92.
Vapours emitted at a given temperature by the same body in two different states, 838.
Vapours, expansion of overheated, 242.
Vapours held in suspension by gases, condensation of, 1194.
Varnish, dull, 1272.
Varnish made from ebonite-cuttings, 308.
Vegetable acids, formation of, in leaves in the autumn, 1049.
Vegetable earth, nitrification of, 725.
Vegetable life, influence of barometric pressure on the phenomena of, 1250.
Vegetable membranes, endosmose of gases through, 1251.
Vegetable parasites of bread, 85.
Vegetable parchment, acceleration of coagulation by, 186.
Vegetables, estimation of manganese in, 193.
Vegetation, action of atmospheric nitrogen on, 1048, 1154.
Veratrine, solubility of, in chloroform, 535.
Vesuvian, constitution of, 1107.

Vesuvius, composition of ashes from, 1011.
Vibrations produced in the particles of bodies by the vibrations of the ether, 242.
Vine, action of the volcanic earth of the Solfatara of Puzzuoli on diseases of the, 523.
Vine, pressure of the sap in the, 293.
Vine-leaves, constituents of, 933.
Vines, ash of the wood of differently manured, 1253.
Vinyl bromide, 45.
Violet derivatives of rosaniline, 913.
Violet dye for wool, 208.
Violet de Paris, 910.
Vitriol-chamber gases, estimation of oxygen in, 1159.
Volcanic building stone, so-called, 952.
Volcanic earth of the Solfatara of Puzzuoli, action of, on diseases of the vine, 523.
Volcanic energy, origin and cosmical relations of, 362.
Volcanic rocks, remarks on the minerals inclosed in, 739.

W.

Waggon-grease, preparation of patent, 305.
Wagnerite, 1207.
Walpurgin, 606, 1109.
Waste products, utilisation of, as manure, 1256.
Water, action of, on the alkalis and alkaline earths, 1096.
—— action of, on lead, 1006.
—— amount of oxygen dissolved in rain and river, 740.
—— coercive action of salts on, 129.
—— consumption of, by animals, 929.
—— detection of, in essential oils, 296.
—— heat evolved in the action of chlorine on, 1094.
—— in electrolyses is not decomposed by the current, 27.
—— softening of, by boiling with lime, 415.
—— thermochemical researches on the solution of various solid, liquid, and aëriform substances in, 1101.
—— unusual amount of ammonia in a so-called "Spa-," 256.
—— what constitutes pure? 1065.
Water of the Harrogate Spas, monthly analytical examinations of, 1089.
Water of the River Mahanuddy, analysis of, 229.
Water of Mattigbad (Mattighofen, Upper Austria), analysis of, 1012.
Water from the springs of Partenkirchen, 486.
Water which supplies Versailles, insolubility of, 1066.
Water and alcohol, detection of, in ether, 532.
Water and hydracids, heat disengaged in the reaction between, 715.
Water and the hydrates of potassium and sodium, heat disengaged in the reactions between, 999.
Water and methyl alcohol, specific heat and other physical characters of mixtures of, 466.
Water-air pump, application of, to evaporation, distillation, filtration, &c., *in vacuo*, 132.
Water-analysis, examination of the methods of, 945.
Water-bath with self-acting draught, 472.
Water filters of moulded charcoal, 1268.
Water-glass, use of, in building, 540.
Waters of Cephalonia, analyses of the, 741.
Waters, drinking, value of carbon filters in purifying, 302.
Waters, mineral, analysis of four, from Bad Ems, 484.
Waters, mineral, containing iron, 741.
Waters, mineral, of Java, containing iodine, 741.
Waters, mineral, of Mehadia in Hungary, 359.
Waters, mineral, of Vichy and its neighbourhood, 859.
Waters of a salt-spring in Huel Seaton Mine, composition and origin of, 857.
Waters, spring-, estimation of the hardness of, 1054.
Waters, sulphuretted, of Eaux-Bonnes, influence of a limited supply of air on, 861.
Waters, thermal, of the Pyrenees, nature of the sulphur-compound contained in the, 861.
Waters, well-, estimation of nitric acid, in, by means of indigo, 1054.
Water-supply and town purification of Berlin, 1267.
Wavellite, 110.
Wax, adulteration of, with tallow, 655.
Weeds, influence of manures on, 934.
Well-waters, estimation of nitric acid in, by means of indigo-solution, 90.
Wheatstone's bridge, best arrangement of, for measuring a given resistance with a given galvanometer and battery, 348.
White lead, manufacture of, 1268.
White lead, red coloration of, 658.
White paint for metallic surfaces, 205.

Wine, estimation of acetic acid in, 92.
—— experiments on the making of according to Chaptal's process, 1275.
—— free acids in, 659, 957.
—— treatment of, with air, during fermentation, 660.
Wine-producing yeast-germs not formed in the grape, 82.
Wines, improvement of, by heating, 99.
Wines and spirits, action of low temperatures on, 1173.
Winkworthite, 150.
Wocheinite, analysis of, 673.
Wolynite, 1211.
Wood, production of furfurol by the action of superheated water upon, 162.
—— protection of, from the influence of moisture, 1072.
—— Sinclair's apparatus for the conversion of, into paper-pulp by chemical means, 308.
Wood of differently manured vines, ash of, 1253.
Wood and other fibrous substances, method of rendering, suitable for pulp to be used in the manufacture of paper, 1069.
Wood-furniture, polishing paste for, 960.
Wood-staining, 423.
Wood-varnish, Parisian, 307.
Wood-vinegar manufacture, cœruligninone, a product of the, 70.
Wool, dyeing of, with aniline-green, 959.
—— freeing of, from fats by carbon sulphide, 658.
—— utilisation of the residues obtained in removing the fat from, by Chaudet's process, 1273.
—— violet dye for, 208.
Wool-fat, composition of, 920.
Woollens, mordanting of, with alum, 206.
Woollens previously coloured with aniline dyes, yellow printing on, 1176.
Wort, estimation of the extract contents of, 95, 655.

X.

Xanthonate, isobutyl-ethylic, 266.
Xylenes, iso- and para-, action of benzyl chloride on, 272.

Y.

Yeast, action of various salts on, 81.
—— action of, on sugar-solutions, 46.
—— organisms existing in, 975.
—— preservation of, 1274.
Yeast-germs, wine-producing, not formed in the grape, 82.
Yellow corallin, 434.
Yellow glass, testing of, for the dark room of photographers, 948.
Yellow on woollens previously coloured with aniline dyes, 1176.
Yttrium, atomic weight of, 137.
Yttrium, combinations of, 136.

Z.

Zeolites, occurrence of, in the basalt of the Limperichkoff at Asbach, 1116.
Zero of thermometers, determination of the true, 129.
Zeunerite, 150, 606, 1109.
Zeunerite from Joachimsthal, 1010.
Zinc, action of, on isopropyl iodide, 965.
—— beer-coolers of, 958.
—— combinations of, with phosphorus, 728.
—— estimation of, by means of a stream of hydrogen, 192.
—— impurities in, 969.
—— influence of metallic deposits on, in presence of acids and alkalis, 1203.
—— separation of, from nickel and cobalt, 1261.
Zinc chloride, action of aluminium on, 848.
Zinc hypophosphite, 9.
Zinc œnanthylate, 1079.
Zinc oxide, red, of New Jersey, 605.
Zinc-ethyl, action of, on silicium methyl ether, 488.
Zinc-ethyl and zinc-methyl, action of bromacetyl bromide on, 48.
Zinc-propyl, 366.
Zirconia, 703.
Zirconium, some compounds of, 1105.
Zircons, analyses of, 705.
Zircons, spectra of, 709.

HARRISON AND SONS, PRINTERS IN ORDINARY TO HER MAJESTY, ST. MARTIN'S LANE.